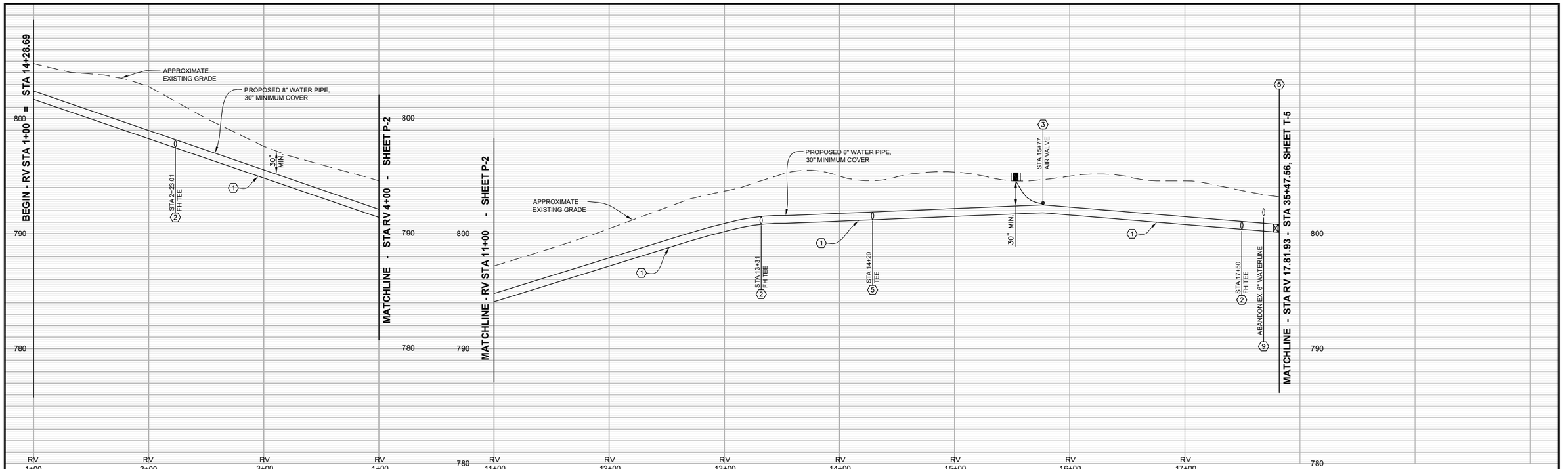
DRAFT ENVIRONMENTAL ASSESSMENT

SANTA BARBARA COUNTY PARKS WATER SYSTEM UPGRADES AT LAKE CACHUMA CAMPGROUND

Appendix A
Preliminary Project Designs Set 2

May 2010



RV LOOP PROFILE
SCALE: 1" = 40' HORIZ.
1" = 4' VERT.

RV LOOP PROFILE
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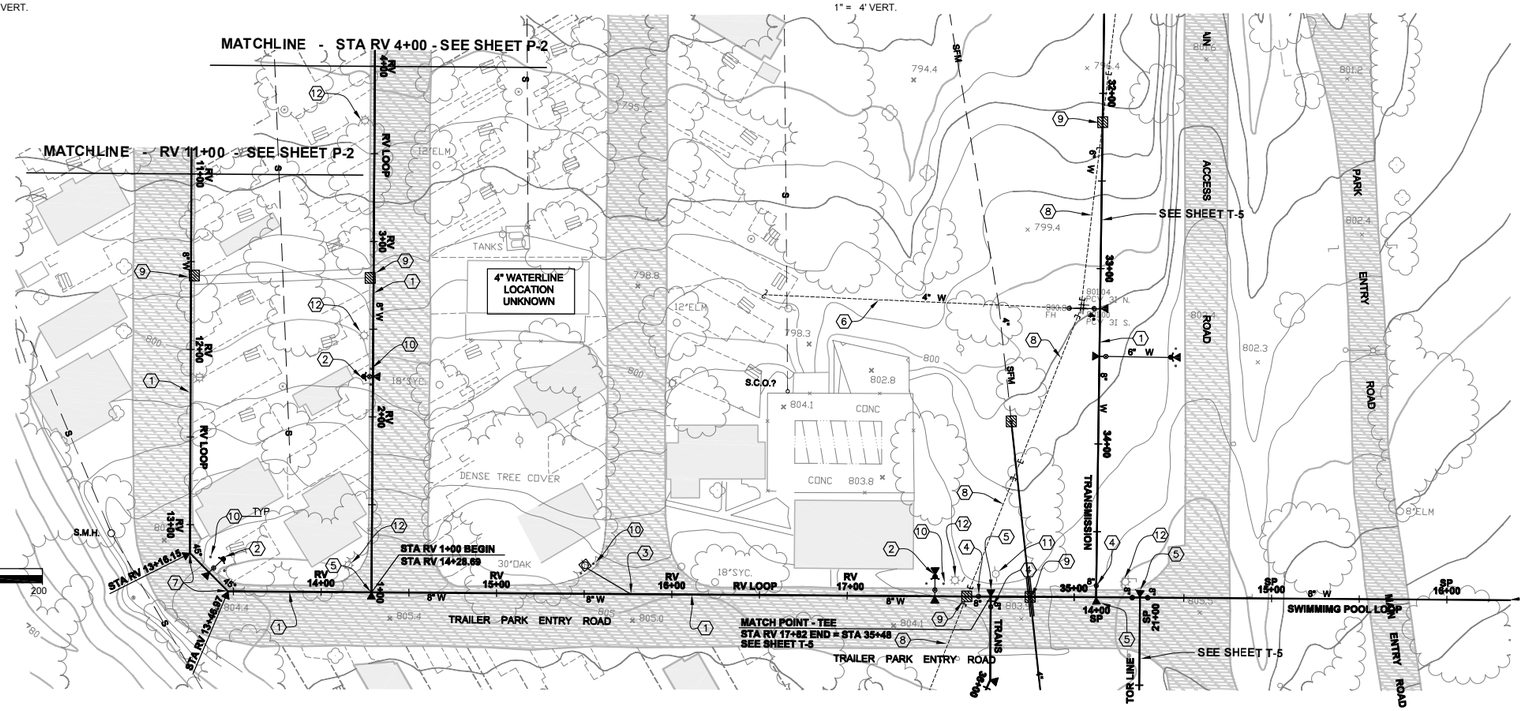
1" = 4' VERT.



SCALE: 1" = 40'

GRAPHIC SCALE
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SPECIFIC CONSTRUCTION NOTES THIS SHEET:

1. CONSTRUCT 8-INCH PVC WATER PIPE, CLASS 200, 30 INCHES MINIMUM COVER, PER TRENCH DETAIL 20 ON SHEET CD-2.
2. CONSTRUCT 6-INCH FIRE HYDRANT ASSEMBLY PER DETAILS 30 AND 32, SHEET CD-3.
3. CONSTRUCT 1-INCH AIR VALVE ASSEMBLY PER DETAIL 34, SHEET CD-3.
4. CONSTRUCT 8-INCH GATE VALVE PER DETAIL 25, SHEET CD-2.
5. CONSTRUCT 8" x 8" x 8" TEE AND THRUST BLOCK PER PIPING DETAILS 24 AND 26 ON SHEET CD-2.
6. PROTECT EXISTING WATER PIPE IN PLACE.
7. CONSTRUCT 45 DEGREE BEND AND THRUST BLOCK PER PIPING DETAILS 24 AND 26 ON SHEET CD-2.
8. ABANDON PIPE PER SPECIFICATIONS.
9. POTHOLE LOCATION OF EXISTING CONDUIT AND REPORT RINDINGS TO ENGINEER PRIOR TO CONSTRUCTION.
10. CONSTRUCT GUARD POSTS PER DETAIL 8 ON SHEET CD-1.
11. PROTECT UTILITY POLE.
12. PROTECT LIGHT.

NO.	DESCRIPTION	DATE	APPROVED
	REVISIONS		

REGISTERED PROFESSIONAL ENGINEER — ERIC L. FLAVELL — No. 33000 — Exp.6-30-10 — CIVIL — STATE OF CALIFORNIA

FLOWERS & ASSOCIATES, INC.
CIVIL ENGINEERS
201 N. Calle Cesar Chavez, Suite 100 Santa Barbara, CA 93103
Telephone (805) 966-2224

BY: _____ DATE: 5/20/09
PROJECT ENGINEER

COUNTY OF SANTA BARBARA
COUNTY PARKS
610 Mission Canyon Road
Santa Barbara, CA 93105

Design: ELF Check: BS
Drawn: SS
Project Engineer:
Date:

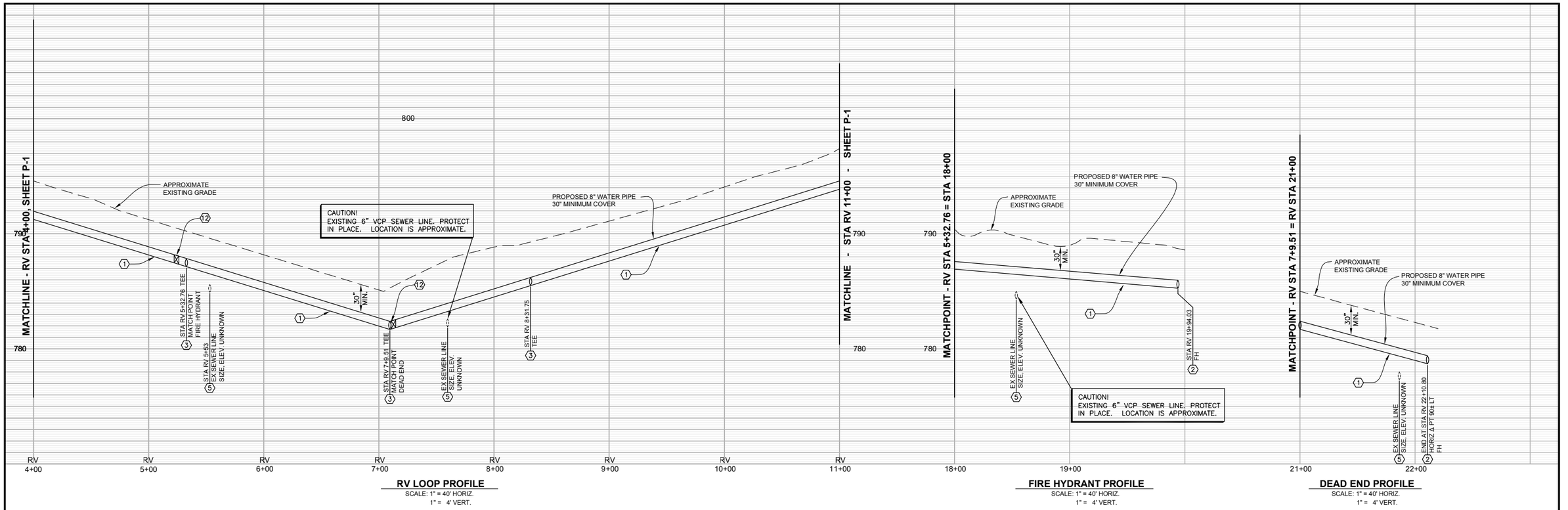
FIRE SYSTEM / LOOPING PLAN AND PROFILE

LAKE CACHUMA WATER STORAGE AND DISTRIBUTION SYSTEM IMPROVEMENTS
COUNTY OF SANTA BARBARA, CALIFORNIA

P-1
SHT. 17 OF 35

PLOTTED: May 20, 2009 - 3:19pm 0352_WSDS_P&P_P1-P7.dwg

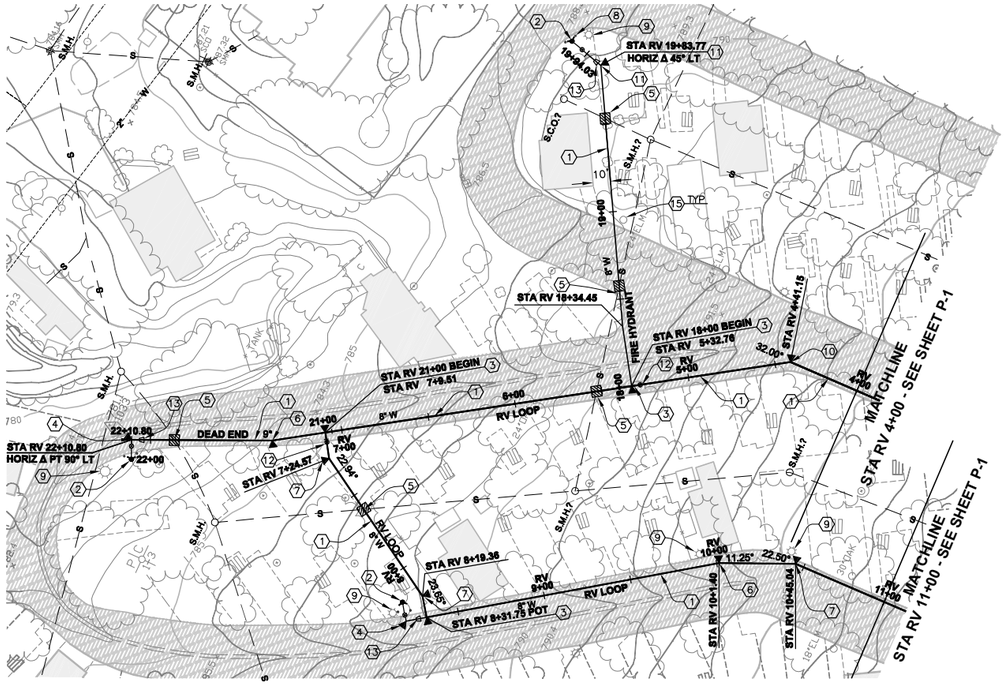
W.O. 0352



RV LOOP PROFILE
SCALE: 1" = 40' HORIZ.
1" = 4' VERT.

FIRE HYDRANT PROFILE
SCALE: 1" = 40' HORIZ.
1" = 4' VERT.

DEAD END PROFILE
SCALE: 1" = 40' HORIZ.
1" = 4' VERT.



SCALE: 1" = 40'

GRAPHIC SCALE
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SPECIFIC CONSTRUCTION NOTES THIS SHEET:

1 CONSTRUCT 8-INCH PVC WATER PIPE, CLASS 200, 30 INCHES MINIMUM COVER, PER TRENCH DETAIL 20 ON SHEET CD-2.

2 CONSTRUCT 6-INCH FIRE HYDRANT ASSEMBLY PER DETAILS 30 AND 32, SHEET CD-3.

3 CONSTRUCT 8" x 6" x 8" TEE AND THRUST BLOCK PER PIPING DETAILS 24 AND 26 ON SHEET CD-2.

4 CONSTRUCT 6" 90° BEND AND THRUST BLOCK PER PIPING DETAILS 24 AND 26 ON SHEET CD-2

5 POTHOLE LOCATION OF EXISTING CONDUIT AND REPORT FINDINGS TO ENGINEER PRIOR TO CONSTRUCTION.

6 CONSTRUCT 11.25 DEGREE BEND AND THRUST BLOCK PER PIPING DETAILS 24 AND 26 ON SHEET CD-2.

7 CONSTRUCT 22.5 DEGREE BEND AND THRUST BLOCK PER PIPING DETAILS 24 AND 26 ON SHEET CD-2.

8 CONSTRUCT GUARD POSTS PER DETAIL 8 ON SHEET CD-1.

9 PROTECT LIGHT.

10 CONSTRUCT COMBINATION 22.5 DEGREE AND 11.25 DEGREE BEND AND THRUST BLOCKS PER PIPING DETIALS 24 AND 26 ON SHEET CD-2.

11 CONSTRUCT 45° BEND AND THRUST BLOCK PER PIPING DETAILS 24 AND 26, SHEET CD-2.

12 CONSTRUCT 8" GATE VALVE PER DETAIL 25, SHEET CD-2.

13 CONSTRUCT 8"X6" DI CONCENTRIC REDUCER.

14 CONSTRUCT 6" PVC WATER PIPE, CLASS 200, 30 INCHES MINIMUM COVER.

15 CONTRACTOR TO SEAL CUT ROOTS ON TREES AS DIRECTED BY PARKS DEPARTMENT INSPECTOR AND ARBORIST.

NO.	DESCRIPTION	DATE	APPROVED

REVISIONS

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Santa Barbara COUNTY PARKS

COUNTY OF SANTA BARBARA
COUNTY PARKS
610 Mission Canyon Road
Santa Barbara, CA 93105

Design: ELF	Check: BS
Drawn: SS	
Project Engineer:	
Date:	

FIRE SYSTEM / LOOPING PLAN AND PROFILE

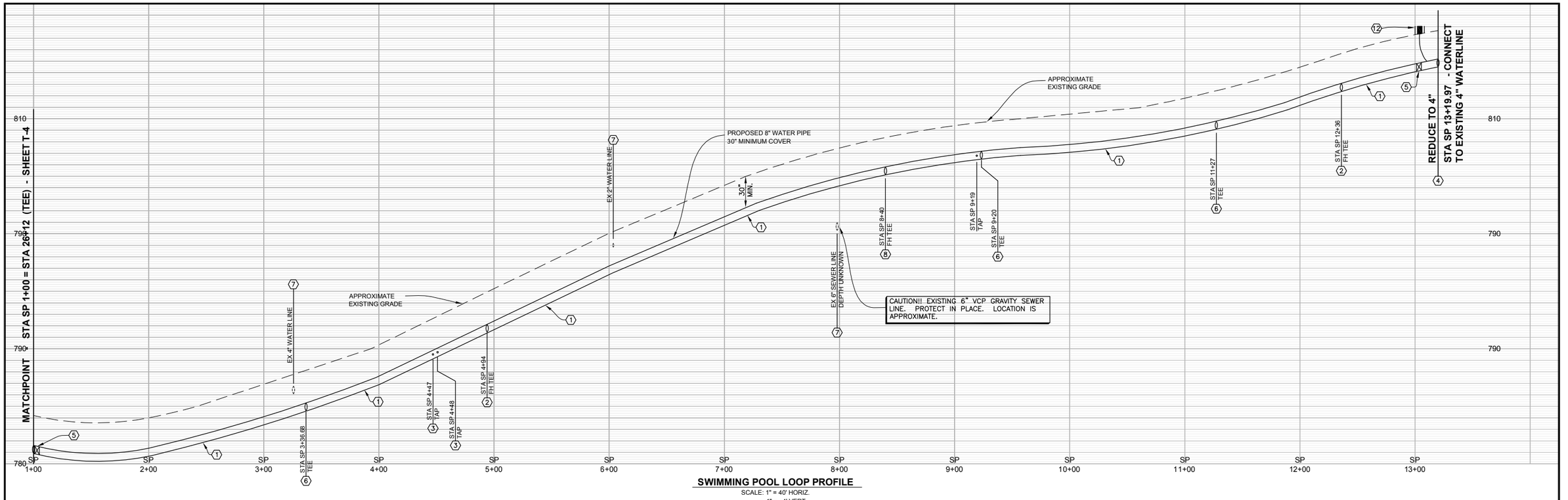
LAKE CACHUMA WATER STORAGE AND DISTRIBUTION SYSTEM IMPROVEMENTS
COUNTY OF SANTA BARBARA, CALIFORNIA

P-2

SHT. 18 OF 35

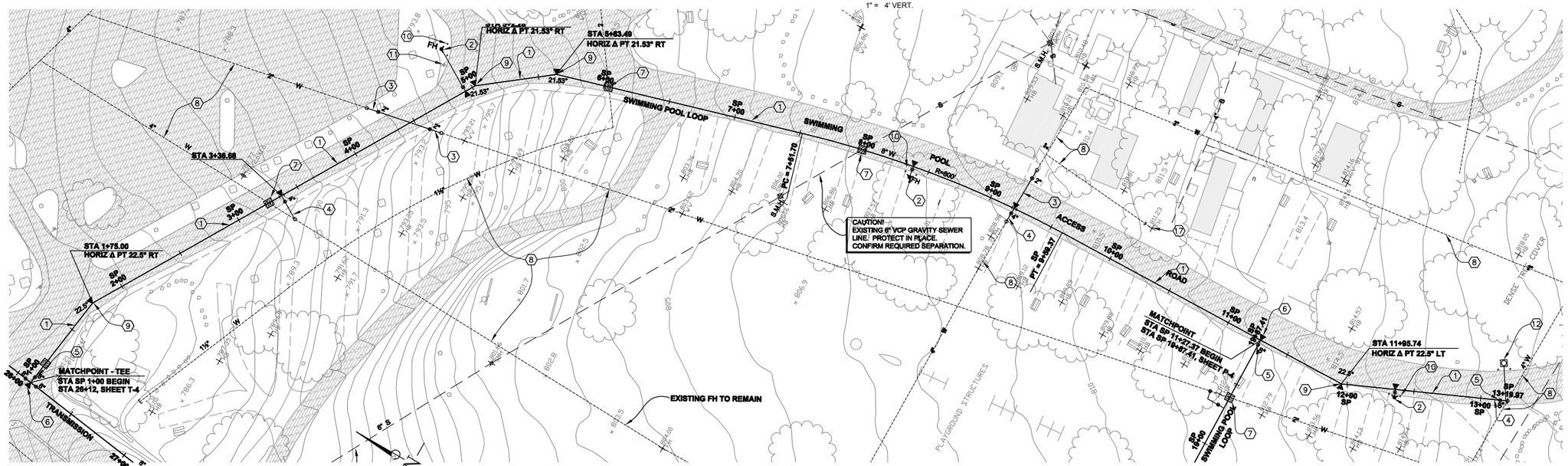
PLOTTED: May 20, 2009 – 3:18pm 0352_WSDS_P&P_P1-P7.dwg

W.O. 0352



SWIMMING POOL LOOP PROFILE

SCALE: 1" = 40' HORIZ.
1" = 4' VERT.



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2. CONSTRUCT 6-INCH FIRE HYDRANT ASSEMBLY PER DETAILS 30 AND 32, SHEET CD-3.
3. CONSTRUCT MINOR DISTRIBUTION LINE CONNECTION, SIZE AS SHOWN, PER DETAIL 35, SHEET CD-3.
4. CONSTRUCT CONNECTION TO EXISTING DISTRIBUTION LINE, SIZE AS SHOWN, PER DETAIL 37, SHEET CD-3.
5. CONSTRUCT 8-INCH GATE VALVE PER DETAIL 25, SHEET CD-2.
6. CONSTRUCT 8" x 8" x 8" TEE AND THRUST BLOCK PER PIPING DETAILS 24 AND 26 ON SHEET CD-2.
7. POTHOLE LOCATION OF EXISTING CONDUIT AND REPORT FINDINGS TO ENGINEER PRIOR TO CONSTRUCTION.
8. PROTECT EXISTING WATER PIPE IN PLACE.
9. CONSTRUCT 22.5 DEGREE BEND AND THRUST BLOCK PER PIPING DETAILS 24 AND 26 ON SHEET CD-2.
10. CONSTRUCT GUARD POSTS PER DETAIL 8 ON SHEET CD-1.
11. PROTECT SIGN.
12. CONSTRUCT 1" AIR VALVE ASSEMBLY PER DETAIL 34 ON SHEET CD-3.
13. CONSTRUCT DI 8"X4" CONCENTRIC REDUCER (FLXFL) AND THURST BLOCKS PER PIPING DETAILS 24 AND 26, SHEET CD-2.
14. CONSTRUCT 4" GATE VALVE (FLXMJ) PER DETAIL 25, SHEET CD-2.
15. CONSTRUCT 8" DI SPOOL (FLXFL) PER DETAILS 24 AND 26, SHEET CD-2.
16. CONSTRUCT 8" DI 11 ¼° AND 45° BENDS (FLXFL) PER DETAILS 24 AND 26, SHEET CD-2.
17. REMOVE EXISTING HYDRANT AND CAP LINE.

NO.	DESCRIPTION	DATE	APPROVED

REVISIONS

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COUNTY PARKS
610 Mission Canyon Road
Santa Barbara, CA 93105

Design: ELF Check: BS
Drawn: SS
Project Engineer:
Date:

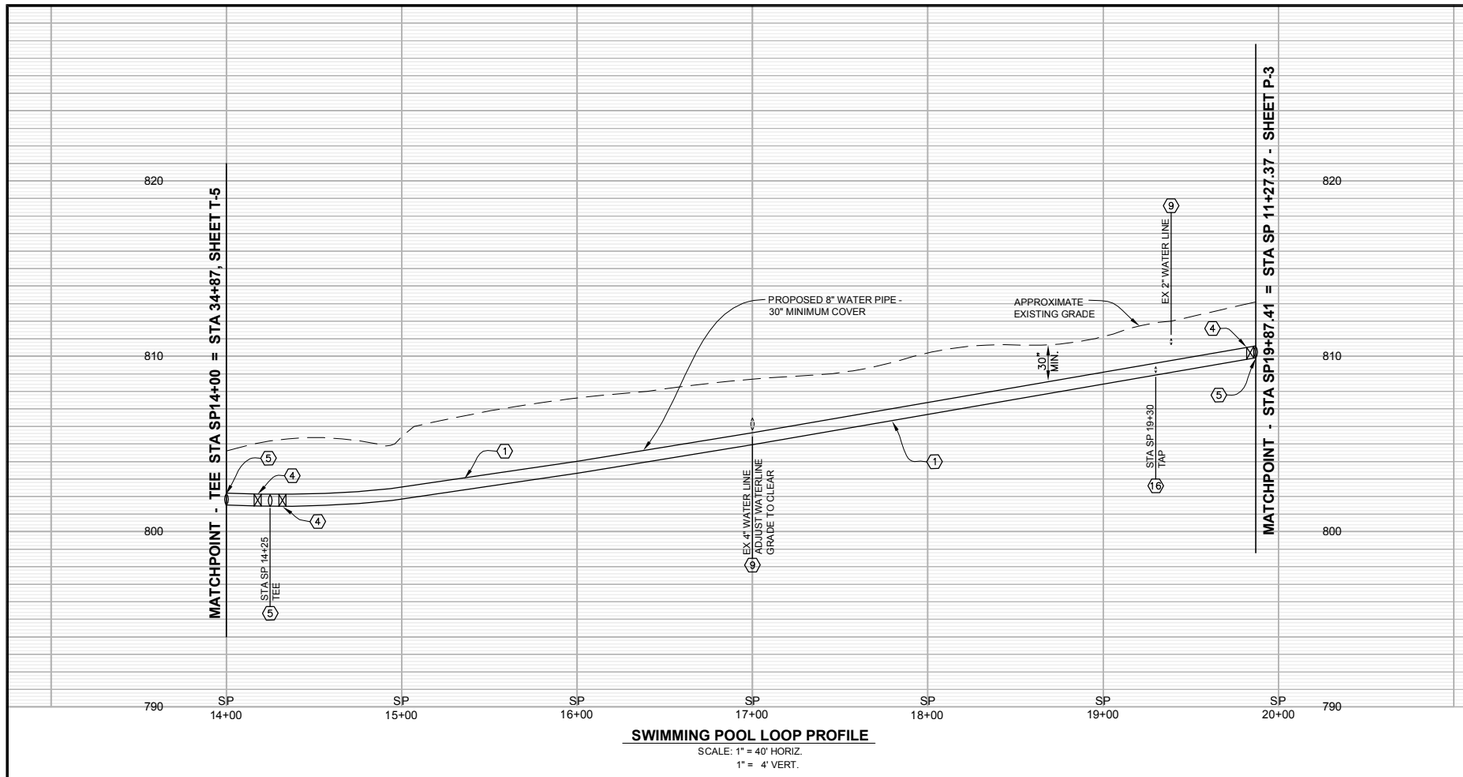
FIRE SYSTEM / LOOPING PLAN AND PROFILE

LAKE CACHUMA WATER STORAGE AND DISTRIBUTION SYSTEM IMPROVEMENTS
COUNTY OF SANTA BARBARA, CALIFORNIA

P-3
SHT. 19 OF 35

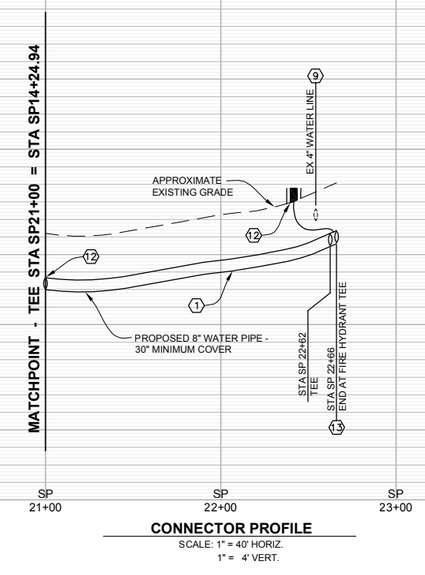
PLOTTED: May 20, 2009 - 3:16pm 0352_WSDS_P&P_P1-P7.dwg

W.O. 0352



SWIMMING POOL LOOP PROFILE

SCALE: 1" = 40' HORIZ.
1" = 4' VERT.



CONNECTOR PROFILE

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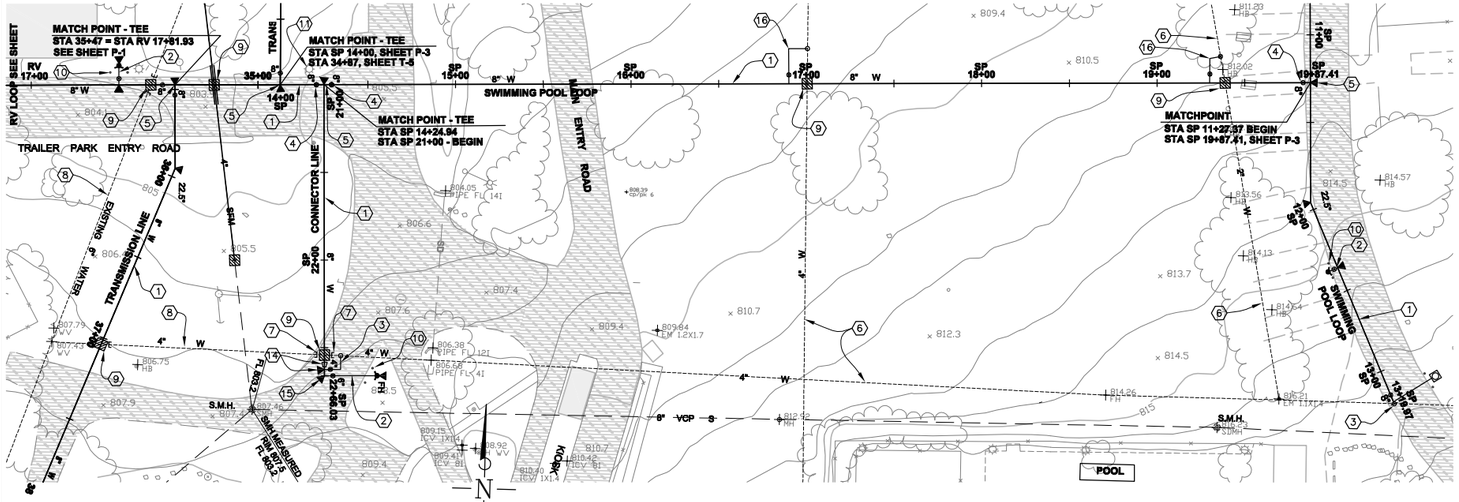
1" = 4' VERT.



GRAPHIC SCALE

0 20 40 80 120 160 200

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1. CONSTRUCT 8-INCH PVC WATER PIPE, CLASS 200, 30 INCHES MINIMUM COVER, PER TRENCH DETAIL 20 ON SHEET CD-2.
2. CONSTRUCT 6-INCH FIRE HYDRANT ASSEMBLY PER DETAILS 30 AND 32, SHEET CD-3.
3. CONSTRUCT CONNECTION TO EXISTING DISTRIBUTION LINE, SIZE AS SHOWN, PER DETAIL 37, SHEET CD-3.
4. CONSTRUCT 8-INCH GATE VALVE PER DETAIL 25, SHEET CD-2.
5. CONSTRUCT 8" x 8" x 8" TEE AND THRUST BLOCK PER PIPING DETAILS 24 AND 26 ON SHEET CD-2.
6. PROTECT EXISTING WATER PIPE IN PLACE.
7. CONSTRUCT END CAP AND THRUST BLOCK PER PIPING DETAILS 24 AND 25 ON SHEET CD-2.
8. ABANDON PIPE PER SPECIFICATIONS.
9. POTHOLE LOCATION OF EXISTING CONDUIT AND REPORT FINDINGS TO ENGINEER PRIOR TO CONSTRUCTION.
10. CONSTRUCT GUARD POSTS PER DETAIL 8 ON SHEET C D-1.
11. PROTECT LIGHT.
12. CONSTRUCT 1" AIR VALVE ASSEMBLY PER DETAIL 34 ON SHEET CD-3.
13. CONSTRUCT 8" DI 90° BEND (FLXFL) AND THRUST BLOCK PER PIPING DETAILS 24 AND 25, SHEET CD-2.
14. CONSTRUCT 8"X6" REDUCER AND 6"X6"X4" TEE AND THRUST BLOCKS PER PIPING DETAILS 24 AND 26 ON SHEET CD-2.
15. CONSTRUCT 6" 90° BEND AND THRUST BLOCK PER DETAILS 24 AND 26 ON SHEET CD-2.
16. CONSTRUCT CONNECTION TO MINOR LINE, SIZE AS SHOWN, PER DETAIL 36, SHEET CD-3 WITH TEE CONNECTION TO EXISTING LINE.

NO.	DESCRIPTION	DATE	APPROVED

REVISIONS

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Santa Barbara COUNTY PARKS

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Project Engineer:	
Date:	

FIRE SYSTEM / LOOPING PLAN AND PROFILE

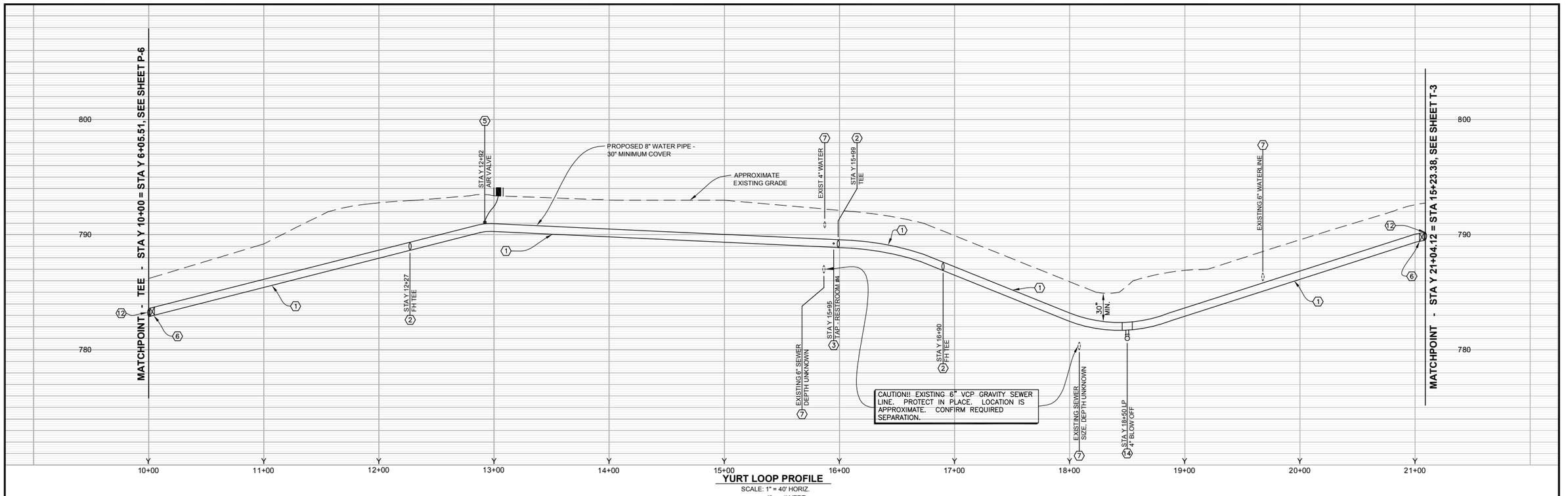
LAKE CACHUMA WATER STORAGE AND DISTRIBUTION SYSTEM IMPROVEMENTS
COUNTY OF SANTA BARBARA, CALIFORNIA

P-4

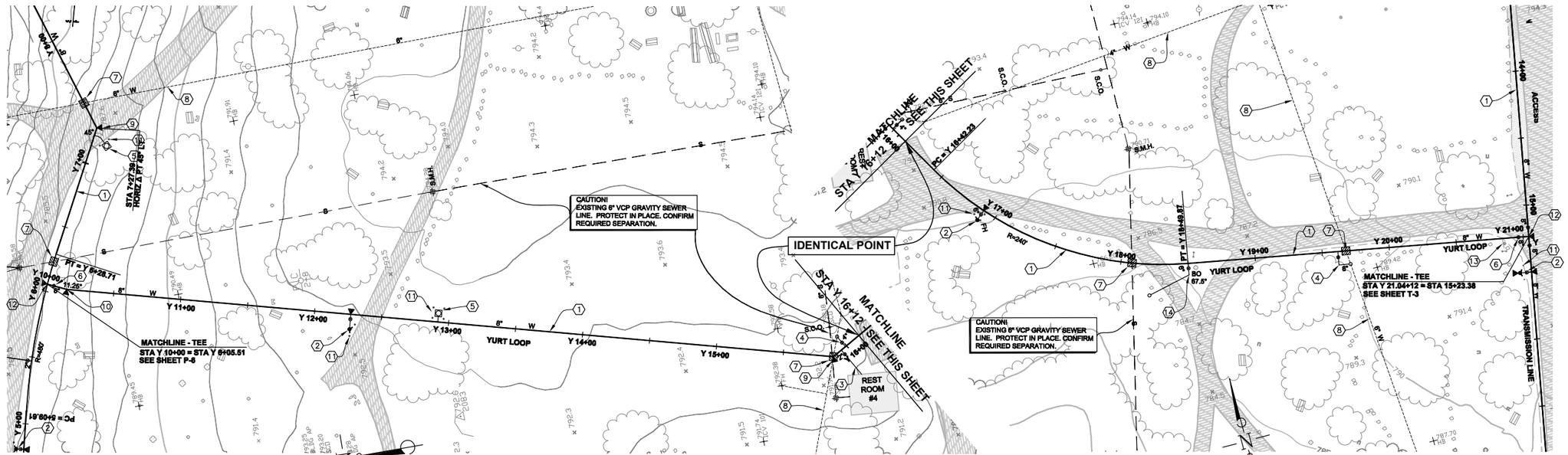
SHT. 20 OF 35

PLOTTED: May 20, 2009 – 3:16pm 0352_WSDS_P&P_P1-P7.dwg

W.O. 0352



YURT LOOP PROFILE
SCALE: 1" = 40' HORIZ.
1" = 4' VERT.



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3. CONSTRUCT MINOR DISTRIBUTION LINE CONNECTION, SIZE AS SHOWN, PER DETAIL 35, SHEET CD-3.
4. CONSTRUCT CONNECTION TO EXISTING DISTRIBUTION LINE, SIZE AS SHOWN, PER DETAIL 37, SHEET CD-3.
5. CONSTRUCT 1-INCH AIR VALVE ASSEMBLY PER DETAIL 34, SHEET CD-3.
6. CONSTRUCT 8-INCH GATE VALVE PER DETAIL 25, SHEET CD-2.
7. POTHOLE LOCATION OF EXISTING 8-INCH SEWER AND REPORT FINDINGS TO ENGINEER PRIOR TO CONSTRUCTION.
8. PROTECT EXISTING WATER PIPE IN PLACE.
9. CONSTRUCT 45 DEGREE BEND AND THRUST BLOCK PER PIPING DETAILS 24 AND 26 ON SHEET CD-2.
10. CONSTRUCT 11 ¼° DEGREE BEND AND THRUST BLOCK PER PIPING DETAILS 24 AND 26 ON SHEET CD-2.
11. CONSTRUCT GUARD POSTS PER DETAIL 8 ON SHEET CD-1.
12. CONSTRUCT 8x8x8 TEE AND THRUST BLOCK PER PIPING DETAILS 24 AND 26 ON SHEET CD-2.
13. PROTECT SIGN.
14. CONSTRUCT 4" BLOW-OFF DISCHARGE ASSEMBLY AT LOW POINT STA 18+50± AS SHOWN PER DETAIL 27, ON SHEET CD-2; WITH 45° AND 22 ½° BENDS AND THRUST BLOCKS PER DETAILS 24 AND 26 ON SHEET CD-2.

NO.	DESCRIPTION	DATE	APPROVED

REVISIONS

REGISTERED PROFESSIONAL ENGINEER ERIC L. FLAJEL No. 33000 Exp.6-30-10 CIVIL STATE OF CALIFORNIA

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COUNTY OF SANTA BARBARA
COUNTY PARKS
610 Mission Canyon Road
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FIRE SYSTEM / LOOPING PLAN AND PROFILE

LAKE CACHUMA WATER STORAGE AND DISTRIBUTION SYSTEM IMPROVEMENTS
COUNTY OF SANTA BARBARA, CALIFORNIA

P-5

SHT. 21 OF 35

PLOTTED: May 20, 2009 – 3:15pm 0352_WSDS_P&P_P1-P7.dwg

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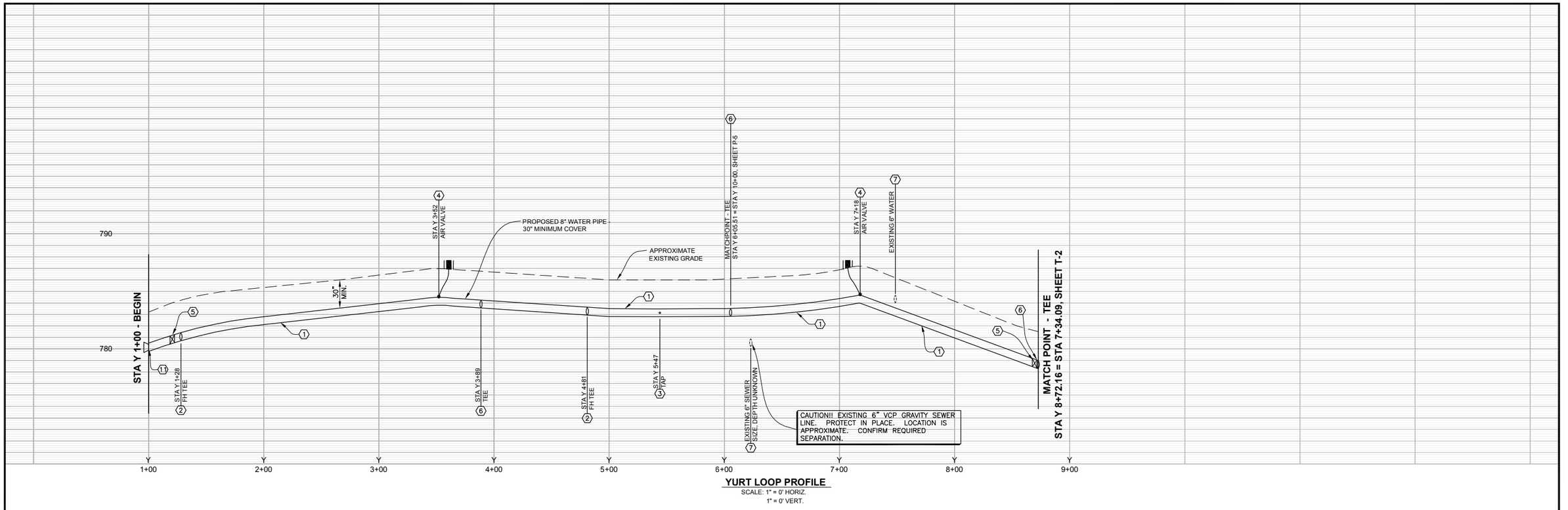

YURT LOOP PROFILE

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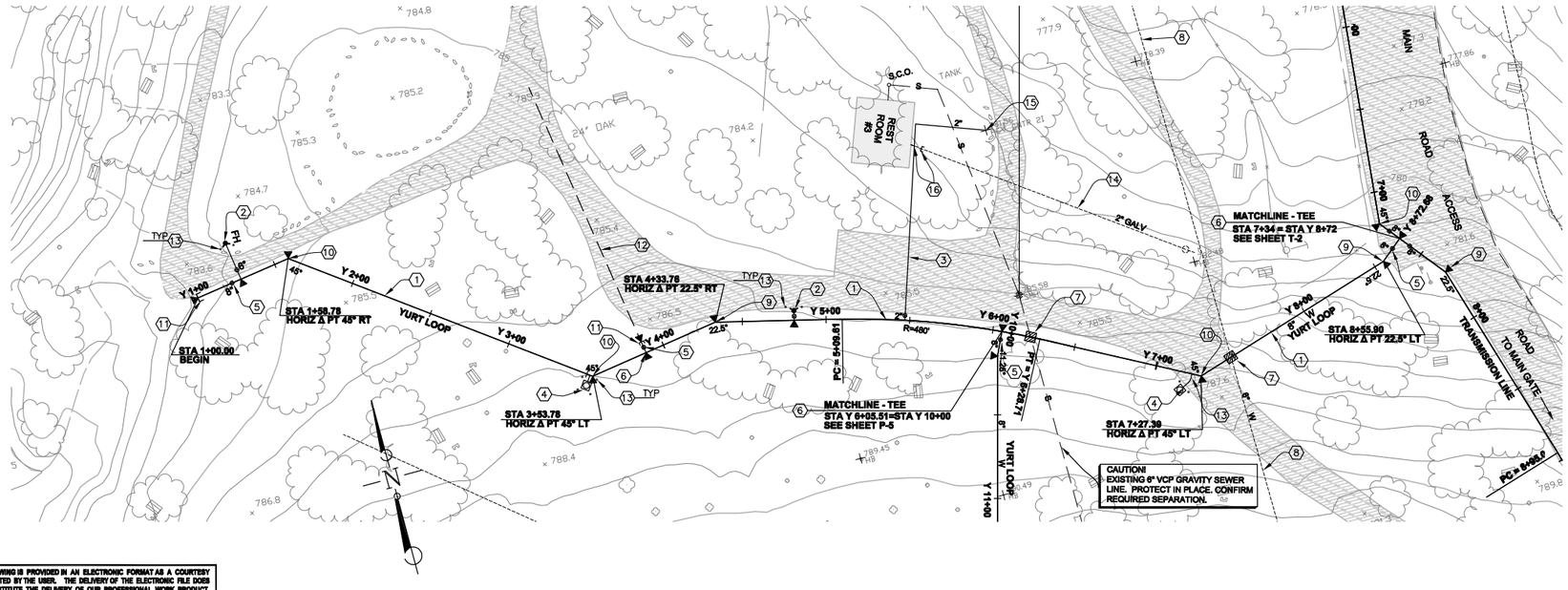
1" = 0' VERT.



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2. CONSTRUCT 6-INCH FIRE HYDRANT ASSEMBLY PER DETAILS 30 AND 32, SHEET CD-3.
3. CONSTRUCT MINOR DISTRIBUTION LINE CONNECTION, SIZE AS SHOWN, PER DETAIL 35, SHEET CD-3.
4. CONSTRUCT 1-INCH AIR VALVE ASSEMBLY PER DETAIL 34, SHEET CD-3.
5. CONSTRUCT 8-INCH GATE VALVE PER DETAIL 25, SHEET CD-2.
6. CONSTRUCT 8" x 8" x 8" TEE AND THRUST BLOCK PER PIPING DETAILS 24 AND 26 ON SHEET CD-2.
7. POTHOLE LOCATION OF EXISTING 8-INCH SEWER AND REPORT FINDINGS TO ENGINEER PRIOR TO CONSTRUCTION.
8. PROTECT EXISTING WATER PIPE IN PLACE.
9. CONSTRUCT 22.5 DEGREE BEND AND THRUST BLOCK PER PIPING DETAILS 24 AND 26 ON SHEET CD-2.
10. CONSTRUCT 45 DEGREE BEND AND THRUST BLOCK PER PIPING DETAILS 24 AND 26 ON SHEET CD-2.
11. CONSTRUCT END CAP AND THRUST BLOCK PER PIPING DETAILS 24 AND 25 ON SHEET CD-2.
12. FUTURE PIPING - NOT IN CONTRACT.
13. CONSTRUCT GUARD POSTS PER DETAIL 8 ON SHEET CD-1.
14. ABANDON PIPE PER SPECIFICATIONS.
15. CONNECT MINOR DISTRIBUTION LINE TO IRRIGATION CONTROL VALVES AT BACKFLOW DEVICE.
16. CONNECT MINOR DISTRIBUTION LINE TO RESTROOM AND CAP EXISTING LINE.

NO.	DESCRIPTION	DATE	APPROVED

REVISIONS

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FIRE SYSTEM / LOOPING PLAN AND PROFILE

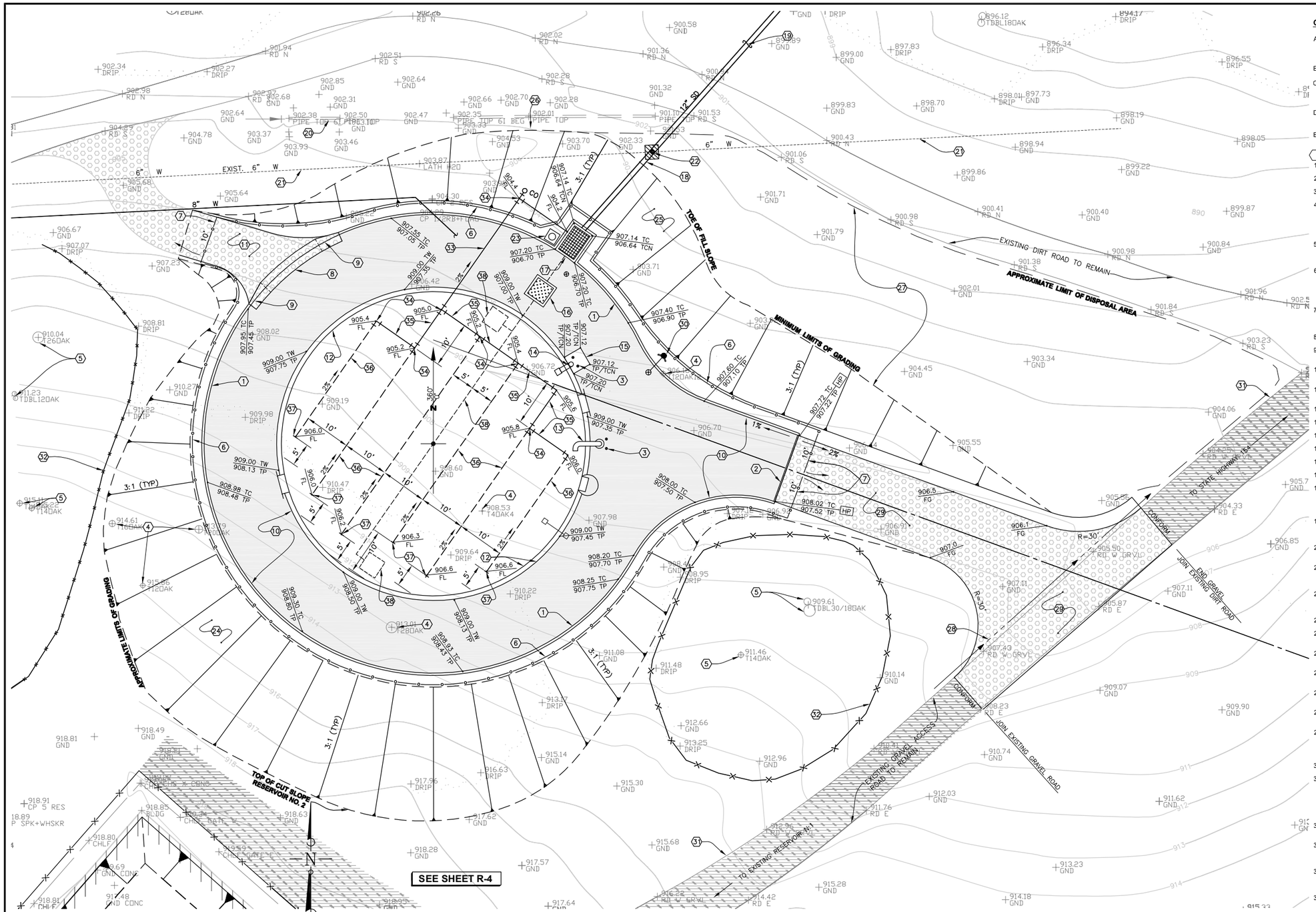
LAKE CACHUMA WATER STORAGE AND DISTRIBUTION SYSTEM IMPROVEMENTS
COUNTY OF SANTA BARBARA, CALIFORNIA

P-6

SHT. 22 OF 35

PLOTTED: May 20, 2009 – 3:14pm 0352_WSDS_P&P_P1-P7.dwg

W.O. 0352



GENERAL CONSTRUCTION NOTES THIS SHEET:

A. ALL GRADING SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT, THE DRAWINGS AND THE SPECIFICATIONS.

B. DIMENSIONS FOR RESERVOIR AND ACCESS ROAD ARE ON SHEET R-2

C. THE TOP 12" OF SOIL SHALL BE REMOVED AND STOCKPILED TO BE REUSED AS COVER MATERIAL ON THE FILL SLOPES. THIS MATERIAL SHALL BE PLACED AND WHEEL ROLLED PRIOR TO HYDROSEEDING THE SLOPE.

D. HYDROSEED ALL AREAS DISTURBED BY THE WORK EXCEPT FOR PAVED AREAS OR THE EXISTING ACCESS ROAD.

E. SEE ADDITIONAL GRADING DETAILS AND INFORMATION ON SHEET R-3

SPECIFIC CONSTRUCTION NOTES THIS SHEET:

1 CONSTRUCT CONCRETE CURB PER DETAIL 3 ON SHEET CD-1.

2 CONSTRUCT REDWOOD HEADER PER DETAIL 6 ON SHEETCD-1.

3 CONSTRUCT GUARD POST PER DETAIL 8 ON SHEET CD-1 (TYPICAL).

4 REMOVE TREE. IN LOCATIONS WHERE IMPROVEMENTS ARE CONSTRUCTED, REMOVE ROOTS AND ROOT STRUCTURE. FILL AND COMPACT FILL TO MINIMUM 95% OF MAXIMUM DENSITY. FOR EACH TREE REMOVED, THE CONTRACTOR SHALL PLANT 10 - 5 GALLON TREES AT LOCATIONS SELECTED BY THE COUNTY, INSIDE THE PARK.

5 PROTECT EXISTING TREE. CONSTRUCT TREE PROTECTION MEASURES. NO WORK SHALL BE PERFORMED INSIDE THE DRIP LINE WITHOUT OF THE CONTRACTOR'S ARBORIST.

6 CONSTRUCT 6 FOOT HIGH PVC COATED FENCE WITH 1" MESH OPENING AND 3 STRAND BARBED WIRE ON TOP. FENCING SHALL INCLUDE TOP AND BOTTOM RAIL AND ALL COMPONENTS SHALL BE PVC COATED. FENCE SHALL BE CONSTRUCTED IN ACCORDANCE WITH CALTRANS STANDARD PLAN A85.

7 CONSTRUCT 10' WIDE PVC COATED GATE LEAF, DOUBLE OR SINGLE AS SHOWN ON THE PLAN, WITH MINIMUM 3" DIAMETER POSTS AND GATE "HOLD-OPEN" FOR EACH.

8 CONSTRUCT MOUNTABLE CURB PER DETAIL 4 ON SHEET CD-1.

9 CONSTRUCT 5' LONG TRANSITION BETWEEN CURB AND MOUNTABLE CURB.

10 CONSTRUCT A.C. PAVEMENT ON AGGREGATE BASE PER DETAIL 2 ON SHEET CD-1.

11 GRADE SMOOTH TRANSITION FROM MOUNTABLE CURB TO GATE. COMPACT SOIL TO MINIMUM 95% OF MAXIMUM DENSITY.

12 RING WALL AND RESERVOIR AS SHOWN ON SHEET R-2.

13 CONSTRUCT RESERVOIR INLET PIPING AS SHOWN ON SHEET R-2.

14 CONSTRUCT OVERFLOW PIPING AS SHOWN ON SHEET R-2.

15 CONSTRUCT OVERFLOW SPLASH PAD AS SHOWN ON SHEET R-2.

16 CONSTRUCT VALVE VAULT AS SHOWN ON SHEET R-2.

17 CONSTRUCT CATCH BASIN AND DRAIN LINE AS SHOWN ON SHEET R-2.

18 CONSTRUCT 12" HDPE STORM DRAIN. STORM DRAIN IS APPROXIMATELY 100' LONG. FIELD VERIFY DISCHARGE POINT WITH ENGINEER, PRIOR TO CONSTRUCTION AND ORDERING PIPE. MINIMUM 2% SLOPE AND MINIMUM OF 50' SHALL BE BURIED.

19 CONSTRUCT RIP RAP ENERGY DISSIPATER PER DETAIL 7 ON SHEET CD-1, ROCK SHALL RANGE IN SIZE FROM 8" MINIMUM TO 16" MAX AND SHALL CONSIST OF MINIMUM OF TWO LAYERS OF ROCK IN ALL LOCATIONS.

20 EXISTING ABANDONED WATER LINE, REMOVE AS REQUIRED FOR CONSTUCTION.

21 EXISTING WATER LINE TO CAMP WHITTIER. PROTECT IN PLACE. WATERLINE MUST BE OPERATIONAL AT ALL TIMES, UNLESS APPROVED IN ADVANCE BY THE ENGINEER IN WRITTING.

22 POTHOLE EXISTING WATERLINE PRIOR TO CONSTRUCTION TO CONFIRM THAT STORM DRAIN WILL PASS BELOW AND CLEAR WATERLINE BY MINIMUM 6".

23 CONSTRUCT ARV ASSEMBLY AS SHOWN ON SHEET R-2.

24 CONSTRUCT CUT SLOPE AT 3H:1V GRADE. PROTECT EXISTING FENCE AND RESERVOIR.

25 CONSTRUCT FILL SLOPE AT 3H:1V GRADE. BENCH AND COMPACT AS REQUIRED, SEE SHEET R-3.

26 CONSTRUCT MINIMUM 12' WIDE KEY AT TOE OF SLOPE (TYPICAL). SEE DETAIL E ON SHEET R-3.

27 EXCESS SOIL CAN BE DISPOSED OF IN THIS AREA, AND SHALL BE PLACED AND CONSOLIDATED PER DETAIL 1 ON SHEET CD-1.

28 REESTABLISH DRAINAGE SWALE ALONG SIDE OF EXISTING ACCESS ROAD AT THE DRIVE ENTRANCE TO THE RESERVOIR.

29 CONSTRUCT NEW ACCESS ROAD AND RE-ESTABLISH EXISTING ROAD. GRADE, SCARIFY AND COMPACT 8" OF SOIL TO MINIMUM OF 95% OF MAXIMUM DENSITY. TOP WITH 2" OF ¾" CRUSHED ROCK WITH DARK OR EARTH COLOR AND COMPACT.

30 CONSTRUCT FIRE HYDRANT PER DETAIL 32 ON SHEET CD-3.

31 REGRADE ENTIRE DIRT ROAD FROM HWY 154 TO EXISTING RESERVOIR, SEE LIMITS ON SHEET G-3. ROAD SHALL BE GRADED WITH FILL AS REQUIRED AND MINIMUM 6" COMPACTED TO MINIMUM 95% OF MAX. DENSITY. REESTABLISH DRAINAGE SWALE ADJACENT TO ROAD. TOP WITH 2" OF ¾" CRUSHED ROCK WITH DARK OR EARTH COLOR AND COMPACT.

32 3-FOOT HIGH ORANGE TREE PROTECTION FENCING AS DIRECTED BY INSPECTOR, TYPICAL AROUND ALL TREES WITHIN THE WORK AREA.

33 CONSTRUCT TANK SUBDRAIN SYSTEM AS SHOWN USING SCHEDULE 80 ABS PIPE AND FITTINGS. ALL PIPE TO BE SOLVENT WELDED AND PLACED AT 2% MINIMUM INVERT GRADE AS SHOWN.

34 CONSTRUCT SIX-3"X3"X3" TEES FOR LATERAL CONNEDTIONS AT LOCATIONS SHOWN IN LAYOUT DIAGRAMAND THREE 90° 3" BENDS FOR SUBDRAIN MANIFOLD SYSTEM.

35 MANIFOLD COMPONENTS AND DRAINLINE TO INLET BOX TO BE CONSTRUCTED WITH 3" SOLID SCHEDULE 80 PIPE AS SHOWN.

36 DRAINAGE LATERALS TO BE CONSTRUCTED WITH 3" PERFORATED SCHEDULE 80 PIPE AS SHOWN ON LAYOUT. ALL PIPE TO HAVE FILTER SOCK INSTALLED.

37 ALL DRAIN LATERALS TO HAVE 3" CAP INSTALLED AT END OF PERFORATED PIPE RUNS AS SHOWN.

38 CONSTRUCT TANK DRAIN BOXES AND 8" TANK DRAINLINE PER DETAILS ON SHEET R-2.

NO.	DESCRIPTION	DATE	APPROVED

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — ERIC L. FLAWELL — No. 33000 Exp.6-30-10 — CIVIL — STATE OF CALIFORNIA

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BY: _____ DATE: 5/20/09
PROJECT ENGINEER

COUNTY OF SANTA BARBARA
COUNTY PARKS
610 Mission Canyon Road
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Design: ELF	Check: BS
Drawn: SS	
Project Engineer:	
Date:	

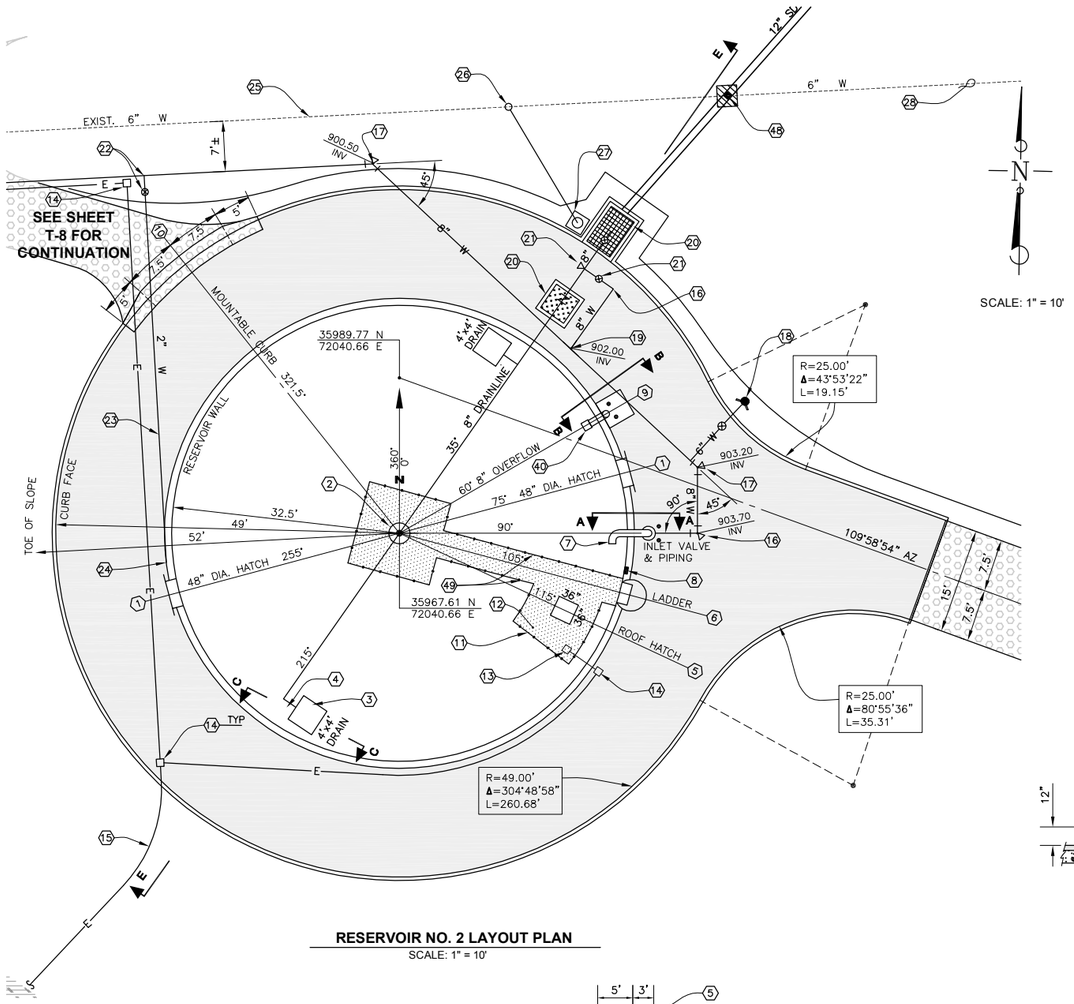
RESERVOIR SITE GRADING, PAVING AND DRAINAGE PLAN

LAKE CACHUMA WATER STORAGE AND DISTRIBUTION SYSTEM IMPROVEMENTS
COUNTY OF SANTA BARBARA, CALIFORNIA

R-1
SHT. 5 OF 35

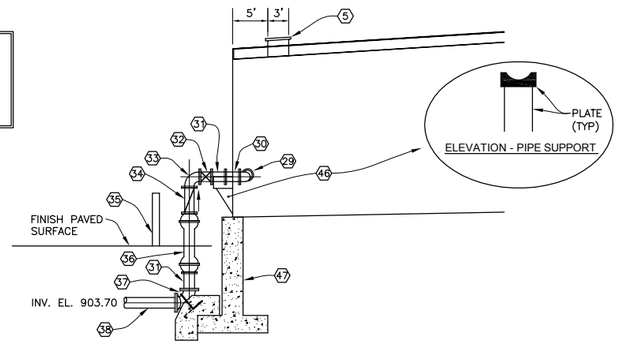
PLOTTED: May 20, 2009 – 3:35pm 0352_WSDS_R1-R4.dwg

W.O. 0352

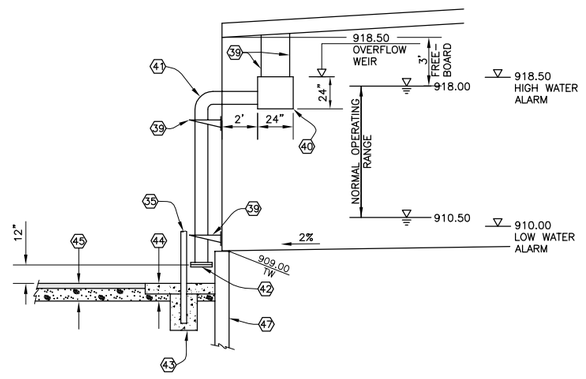


RESERVOIR NO. 2 LAYOUT PLAN
SCALE: 1" = 10'

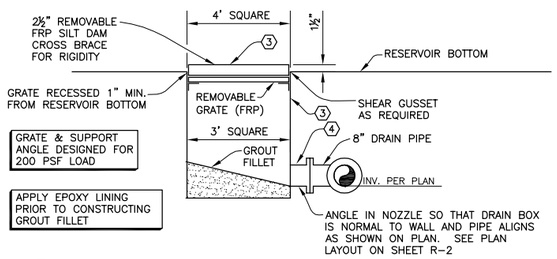
ALL ABOVE GROUND PIPING, INSIDE AND OUTSIDE OF THE RESERVOIR SHALL BE EPOXY LINED AND COATED. EXTERIOR PIPING SHALL BE SEALED WITH ONE COAT OF POLYURETHANE COATING.



A INLET PIPING DETAIL / SECTION A-A
SCALE: 1" = 5'



B OVERFLOW DETAIL / SECTION B-B
SCALE: 1" = 4'



C RESERVOIR DRAIN DETAIL
NOT TO SCALE

GENERAL CONSTRUCTION NOTES THIS SHEET:

A ALL GRADING SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT, THE DRAWINGS AND THE SPECIFICATIONS.

B ALL ABOVE GROUND PIPING, THE RESERVOIR AND EXPOSED FERROUS METALS, INCLUDING PIPE IN VAULTS SHALL BE EPOXY LINED AND COATED. COLORS SHALL BE AS SELECTED BY THE COUNTY.

C PIPING ASSEMBLY AND OTHER DETAILS APPLY WHETHER SPECIFICALLY REFERENCED OR NOT.

SPECIFIC CONSTRUCTION NOTES THIS SHEET:

1 CONSTRUCT TWO 48" DIAMETER HINGED WATER TIGHT ACCESS HATCHES, WITH BOTTOM OF HATCH 12" ABOVE RESERVOIR BOTTOM

2 SCREENED VENT STRUCTURE WITH HARNESS RING ON TOP. VENT STRUCTURE SHALL BE DESIGNED THE SUPPORT THE LOAD OF A PERSON WITH SAFETY HARNESS CONNECTED TO THE HARNESS RING. SCREEN SHALL BE BRONZE.

3 CONSTRUCT 4' X 4' STEEL DRAIN PER DETAIL C ON THIS SHEET (TYPICAL OF 2). ALIGN WITH WALL OF RESERVOIR.

4 CONSTRUCT FABRICATED BEND OR ADJUST DRAIN NOZZLE ANGLE TO ACCOMMODATE DIFFERENCE BETWEEN DRAIN LINE 90 DEGREE BEND AND WALL OF DRAIN (TYPICAL OF 2).

5 CONSTRUCT 36" X 36" BILCO ROOF HATCH AND ACCESS LADDER WITH LADDER EXTENSION.

6 CONSTRUCT ACCESS LADDER WITH SAFETY CAGE AND HARNESS CONNECTOR.

7 CONSTRUCT INLET PIPING PER DETAIL A ON THIS SHEET

8 CONSTRUCT HALF HEIGHT WATER LEVEL INDICATOR. LOCATE WITHIN 12" OF LADDER SO THAT IT CAN BE ACCESSED BY HAND BY SOMEONE ON THE LADDER. CONFIRM LOCATION WITH COUNTY PRIOR TO INSTALLATION.

9 CONSTRUCT OVERFLOW PER DETAIL B ON THIS SHEET.

10 CONSTRUCT MOUNTABLE CURB PER LOCATION AND DIMENSIONS THIS SHEET AND AS CALLED FOR ON SHEET R-1.

11 CONSTRUCT STEEL GUARD RAIL CONFORMING TO ADA AND OSHA REQUIREMENTS. COAT WITH SAME COATING SYSTEM USED ON THE REST OF THE RESERVOIR.

12 APPLY NON-SKID SURFACE ON WALK AREA, WITHIN GUARDRAIL LIMITS, OF RESERVOIR ROOF.

13 J-BOX MOUNTED ON ROOF AND SIZED FOR LEVEL DETECTOR. SURFACE MOUNTED CONDUIT SHALL BE RIDGID AND SHALL BE PVC COATED OR COATED WITH THE COATING SYSTEM USED ON THE RESERVOIR. LEVEL DETECTOR SHALL BE COMPLETELY ACCESSIBLE FROM THE ROOF FOR SERVICING, REMOVAL AND REPLACEMENT.

14 JUNCTION BOX LOCATED AS REQUIRED AND AT 100' MAXIMUM SPACING. SEE DETAIL 20 ON SHEET CD-2.

15 CONDUIT TO EXISTING RESERVOIR, SEE SHEET T-8 FOR CONTINUATION. SEE DETAIL 20 ON SHEET CD-2 FOR INSTALLATION REQUIREMENTS.

16 CONSTRUCT 8" - 90 DEGREE BEND (RMJ X RMJ) WITH THRUST BLOCK.

17 CONSTRUCT 8" - 45 DEGREE BEND (RMJ X RMJ) WITH THRUST BLOCK.

18 CONSTRUCT FIRE HYDRANT ASSEMBLY PER DETAIL 32 ON SHEET CD-3.

19 CONSTRUCT 8" - TEE (RMJ X RMJ X RMJ) WITH THRUST BLOCK.

20 CONSTRUCT VALVE VAULT, DRAINAGE INLET AND ASSOCIATED PIPING PER DETAIL D ON SHEET R-3

21 CONSTRUCT 8" - TEE (RMJ X RMJ X FLG) WITH THRUST BLOCK AND 8" GATE VALVE (FLG X RMJ).

22 CONSTRUCT 2" SADDLE CONNECTION AND 2" CORPORATION STOP PER DETAIL 31 ON SHEET CD-3.

23 CONSTRUCT 2" SCHD 40 PVC PIPELINE.

24 CONNECT TO 2" PVC PIPE WITH 2" HARD COPPER FEMALE THREADED CONNECTOR, AND CONSTRUCT 90 DEGREE BEND AND RISER AND 2" HARD COPPER HEADER CONSISTING OF 2" ANGLE VALVE WITH HOSE CONNECTION AND 1" AND ½" HOSE BIBS. ALL COMPONENTS SHALL BE COPPER, BRASS OR BRONZE. COPPER PIPE AND PIPE SUPPORTS SHALL BE GALVANICALLY ISOLATED FROM THE RESERVOIR AND ALL FERROUS MATERIALS.

25 EXISTING CAMP WHITTIER WATER SUPPLY LINE. PROTECT IN PLACE

26 CONNECT 1" LINE TO TOP OF EXISTING 6" WATERLINE WITH SADDLE ADAPTORS AND FITTINGS AS REQUIRED AND EXTEND 1" PIPELINE TO ARV PER DETAIL 34 ON SHEET CD-3.

27 CONSTRUCT 1" ARV ASSEMBLY PER DETAIL 34 ON SHEET CD-3.

28 CONSTRUCT 1" ARV ASSEMBLY PER DETAIL 34 ON SHEET CD-3 AT LOCATION IDENTIFIED BY COUNTY. APPROXIMATE LOCATION SHOWN ON SHEET G-3.

29 CONSTRUCT 8" - 90 DEGREE BEND (FLG X FLG), ROTATE 22.5 DEGREES UP.

30 CONSTRUCT 8" - NIPPLE WALL PENETRATION (FLG X FLG)

31 CONSTRUCT 8" - NIPPLE (FLG X FLG) LENGTH AS REQUIRED.

32 CONSTRUCT 8" GATE VALVE, ROTATE 90 DEGREES SO HAND WHEEL STEM IS PARALLEL WITH FINISH GRADE.

33 CONSTRUCT 8" - 90 DEGREE BEND (FLG X FLG)

34 CONSTRUCT LOW HEAD CHECK VALVE WITH "HOLD OPEN". ACCESS PLATE SHOULD BE FACING AWAY FROM RESERVOIR WALL.

35 CONSTRUCT GUARD POST PER DETAIL 8 ON SHEET CD-1 (TYPICAL).

36 CONSTRUCT FLEXIBLE EXPANSION JOINT (FLG X FLG)

37 CONSTRUCT 8" - 90 DEGREE BEND (FLG X RMJ) WITH TIED DOWN THRUST BLOCK MODIFIED TO CONFORM TO RESERVOIR FOOTING.

38 CONSTRUCT ONE JOINT OF CLASS 53 DUCTILE IRON PIPE AND TRANSITION TO CLASS 200 PVC PIPE.

39 CONSTRUCT HANGERS AND SUPPORTS AS REQUIRED FOR THE OVERFLOW ASSEMBLY.

40 CONSTRUCT MINIMUM 2' X 2' OVERFLOW BOX AND EPOXY LINE AND COAT.

41 CONSTRUCT 8" WELDED STEEL OVERFLOW ASSEMBLY WITH FLANGED END 12" ABOVE FINISH GRADE. OVERFLOW ASSEMBLY SHALL BE EPOXY LINED AND COATED.

42 CONSTRUCT FLANGE END AND CUT ~8" DIAMETER OPEN TO MATCH THE I.D. OF THE PIPE. CONSTRUCT STAINLESS STEEL SCREEN WITH ¾" OPENINGS THAT IS SANDWICHED BETWEEN THE FLANGES.

43 CONSTRUCT CONCRETE BASE, RECESS TOP OF CONCRETE BASE TO ACCOMMODATE CONCRETE SPLASH PAD.

44 CONSTRUCT SPLASH PAD OF 8" THICK CONCRETE WITH 4-#4 BARS ON 4" OF AGGREGATE BASE.

45 CONSTRUCT A.C. PAVEMENT STRUCTURAL SECTION PER DETAIL 2 ON SHEET CD-1.

46 WELDED STEEL ¾" PLATE PIPE SUPPORT BRACKET.

47 CONSTRUCT CONCRETE RING WALL PER STRUCTURAL SHEET S-2.1.

48 POTHOLE LOCATION OF EXISTING CONDUIT AND REPORT FINDINGS TO ENGINEER PRIOR TO CONSTRUCTION.

49 LIMITS OF NON-SKID SURFACE.

NO.	DESCRIPTION	DATE	APPROVED

REVISIONS

REGISTERED PROFESSIONAL ENGINEER ERIC L. FLAPAN No. 33000 Exp.6-30-10 CIVIL STATE OF CALIFORNIA

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BY: _____ DATE: 5/20/09
PROJECT ENGINEER

COUNTY OF SANTA BARBARA
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Design: ELF Check: BS
Drawn: SS
Project Engineer:
Date:

RESERVOIR NO. 2 LAYOUT AND SECTIONS

LAKE CACHUMA WATER STORAGE AND DISTRIBUTION SYSTEM IMPROVEMENTS
COUNTY OF SANTA BARBARA, CALIFORNIA

R-2

SHT. 6 OF 35

PLOTTED: May 20, 2009 – 3:35pm 0352_WSDS_R1-R4.dwg

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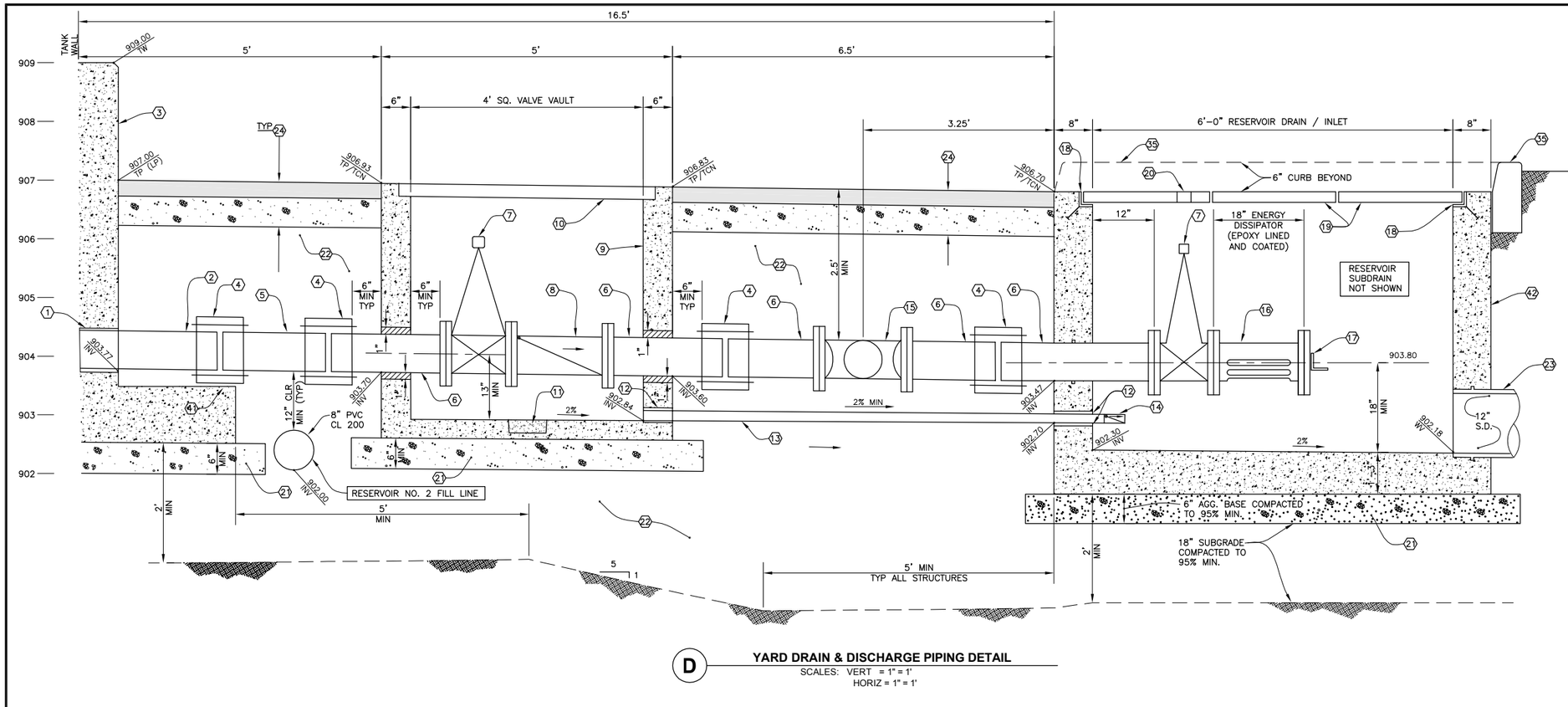
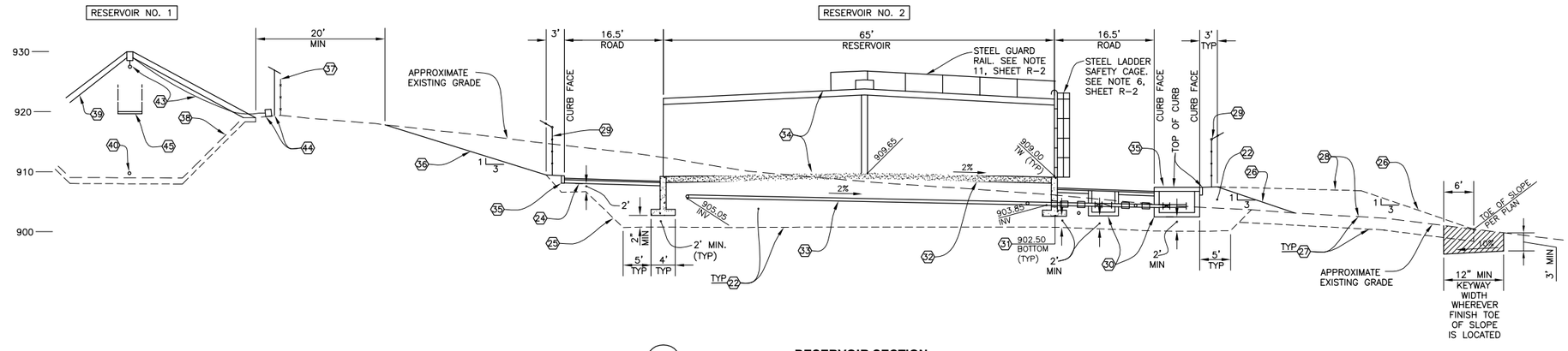


D **YARD DRAIN & DISCHARGE PIPING DETAIL**

SCALES: VERT = 1" = 1'
HORIZ = 1" = 1'



E **RESERVOIR SECTION**

SCALES: VERT = 1" = 10'
HORIZ = 1" = 10'

GENERAL CONSTRUCTION NOTES THIS SHEET:

A. ALL ABOVE GROUND PIPING, THE RESERVOIR AND EXPOSED FERROUS METALS, INCLUDING PIPE IN VAULTS SHALL BE EPOXY LINED AND COATED. COLORS SHALL BE AS SELECTED BY THE COUNTY.

B. PIPING ASSEMBLY AND OTHER DETAILS APPLY WHETHER SPECIFICALLY REFERENCED OR NOT.

SPECIFIC CONSTRUCTION NOTES THIS SHEET:

1 CONSTRUCT SLEEVE FOR 8" DRAIN LINE THROUGH RING WALL .

2 CONSTRUCT DRAIN LINE FROM DRAINAGE SUMPS OF 8" DIP. TERMINATE IN PLAIN END.

3 CONSTRUCT RESERVOIR FOUNDATION, SEE SHEET S-2.1.

4 CONSTRUCT FLEX COUPLER.

5 CONSTRUCT DIP NIPPLE (PE X PE).

6 CONSTRUCT DIP NIPPLE (FLG X PE).

7 CONSTRUCT GATE VALVE (FLG X FLG) WITH 2" NUT OPERATOR.

8 CONSTRUCT LOW HEAD CHECK VALVE WITH "HOLD OPEN".

9 CONSTRUCT 4' X 4' PRECAST VAULT. SET VAULT TO MATCH SLOPE OF ROAD AS CALLED FOR ON GRADING PLAN SHEET R-1.

10 TRAFFIC RATED ALUMINUM, SPRING LOADED, HINGED, LOCKING COVER.

11 GROUT DRAIN KNOCK-OUT FLUSH WITH BOTTOM OF VAULT.

12 CORE HOLE FOR DRAIN LINE AND CAULK ANNULAR SPACE.

13 CONSTRUCT 2" PVC DRAIN LINE AND CAULK ANNULAR SPACE OF WALL PENETRATIONS.

14 CONSTRUCT 2" THREADED PVC CHECK VALVE.

15 CONSTRUCT 8" DIP TEE (RMJ X RMJ X FLG) AND THRUST BLOCK.

16 CONSTRUCT CUSTOM MADE 8" ENERGY DISSIPATER (FLG X FLG) WITH 5 - 1" WIDE SLOTS.

17 CONSTRUCT PIPE SUPPORT PER DETAIL 5 ON SHEET S-4.2.

18 CONSTRUCT GALVANIZED GRATE FRAME PER CALTRANS D77A.

19 CONSTRUCT FABRICATED WELDED AND GALVANIZED GRATE PER CALTRANS STANDARD PLAN D77A, TYPE 18-9X AND 24-12X GRATE, MODIFIED TO THE DIMENSIONS SHOWN ON THE PLANS. GRATING SHALL BE CUT INTO SECTIONS NOT TO EXCEED 30 LBS.

20 CUT AND BAND OPENING LOCATED OVER THE VALVE AND SIZED TO ALLOW ACCESS OF 2" NUT WRENCH WITHOUT REMOVING THE GRATE.

21 CONSTRUCT 6" AGGREGATE BASE UNDER ALL STRUCTURES (TYPICAL).

22 REMOVE SOIL A MINIMUM OF 2' BELOW ALL PROPOSED IMPROVEMENTS AND EXTENDING A MINIMUM OF 5' BEYOND. SCARIFY AND MOISTURE CONDITION SUBGRADE AND COMPACT TO MINIMUM OF 95% OF MAXIMUM DENSITY. CLEAN, CONDITION AND REPLACE REMOVED SOIL AND COMPACT TO MINIMUM OF 95% OF MAXIMUM DENSITY.

23 CONSTRUCT 12" HDPE STORM DRAIN WITH INTEGRAL WEEP RING.

24 CONSTRUCT A.C. PAVEMENT STRUCTURAL SECTION PER DETAIL 2 ON SHEET CD-1.

25 SLOPE EXCAVATION FROM ONE ELEVATION TO THE NEXT AT 1H:1V. BENCH FILL A MINIMUM OF 2' INTO SLOPE AS FILL IS PLACED (TYP).

26 CONSTRUCT FILL SLOPE AT MAXIMUM OF 3H:1V SLOPE OR FLATTER. FINISH SLOPE SHOULD BE CONTOUR GRADED FOR A NATURAL APPEARANCE.

27 REMOVE 12" 0F TOP SOIL AND STOCK PILE FOR REUSE AS SURFACE SOIL ON FINISH GRADE. COMPACT MOISTURE CONDITION AND COMPACT SUBGRADE TO MINIMUM OF 90% OF MAXIMUM DENSITY. CONSTRUCT KEY AT BASE OF SLOPE AND BENCH INTO SLOPE, PER DETAIL 1 ON SHEET CD-1.

28 CONSTRUCT EXCESS SOIL DISPOSAL FILL TO THE APPROXIMATE LIMITS SHOWN IN PLAN ON SHEET R-2.

29 CONSTRUCT 6 FOOT HIGH PVC COATED FENCE WITH 1" MESH OPENING AND THREE STRAND BARBED WIRE ON TOP. FENCING SHALL INCLUDE TOP AND BOTTOM RAIL AND ALL COMPONENTS SHALL BE PVC COATED. FENCE SHALL BE CONSTRUCTED IN ACCORDANCE WITH CALTRANS STANDARD PLAN A85.

30 CONSTRUCT VAULT, CATCH BASIN AND PIPE ASSEMBLY PER DETAIL D THIS SHEET.

31 OVEREXCAVATION SHALL BE MINIMUM 5' BELOW EXISTING GRADE AND 2' BELOW THE BOTTOM OF THE RING WALL FOUNDATION, AND EXTEND A MINIMUM OF 5' BEYOND THE PERIMETER OF THE RING WALL. CONFIRM PLAN ELEVATION CONFORMS TO THIS CRITERIA.

32 SEE SHEET S-4.2 FOR RESERVOIR FOUNDATION MATERIAL.

33 CONSTRUCT 8" DIP DRAIN LINE.

34 CONSTRUCT RESERVOIR PER PLAN AND DETAILS ON SHEET R-2

35 CONSTRUCT CONCRETE CURB PER PLAN LAYOUT ON SHEET R-1, R-2 AND DETAIL 3 ON SHEET CD-1.

36 CONSTRUCT CUT SLOPE AT MAXIMUM 3H:1V AND CONTOUR GRADE FOR SMOOTH NATURAL APPEARANCE. NO EXCAVATION WORK SHALL BE WITHIN 20' OF THE EXISTING RESERVOIR.

37 PROTECT EXISTING FENCE.

38 EXISTING RESERVOIR, PROTECT IN PLACE. SEE SHEET R-4 FOR MODIFICATION TO EXISTING RESERVOIR.

39 REMOVE EXITING ROOF STRUCTURE AND CONSTRUCT NEW ROOF STRUCTURE AND WALK WAY PER DETAILS ON SHEET S-4.1.

40 CONSTRUCT INLET / OUTLET PIPING MODIFICATIONS PER DETAILS ON SHEET R-4.

41 BLOCK OUT FOOTING AS REQUIRED FOR INSTALLATION OF FLEX COUPLING. SUBMIT PROPOSED MODIFICATIONS TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

42 CONSTRUCT RESERVOIR DRAIN / INLET PER STRUCTURAL DRAWINGS SHEET S-4.2.

43 CONSTRUCT 12 VOLT LIGHTING SYSTEM WITH 5-10 WATT LIGHTS. LIGHTS SHALL BE SET 7' ABOVE WALKWAY.

44 CONSTRUCT SOLAR PANEL AND BATTERY PACK SIZED FOR 5-100 WATT BULBS FOR 8 HOURS CONTINUOUS USE.

45 CONSTRUCT WALKWAY AND HANDRAIL PER STRUCTURAL DETAILS ON SHEET S-4.1.

NO.	DESCRIPTION	DATE	APPROVED
	REVISIONS		

REGISTERED PROFESSIONAL ENGINEER — ERIC L. FLAHEY — No. 33000 — Exp.6-30-10 — CIVIL — STATE OF CALIFORNIA

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BY: _____ PROJECT ENGINEER DATE: 5/20/09

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COUNTY OF SANTA BARBARA
COUNTY PARKS
610 Mission Canyon Road
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Design: ELF	Check: BS
Drawn: SS	
Project Engineer:	
Date:	

RESERVOIR NO. 2 SECTIONS

LAKE CACHUMA WATER STORAGE AND DISTRIBUTION SYSTEM IMPROVEMENTS
COUNTY OF SANTA BARBARA, CALIFORNIA

R-3

SHT. 7 OF 35

PLOTTED: May 20, 2009 - 3:34pm 0352_WSDS_R1-R4.dwg

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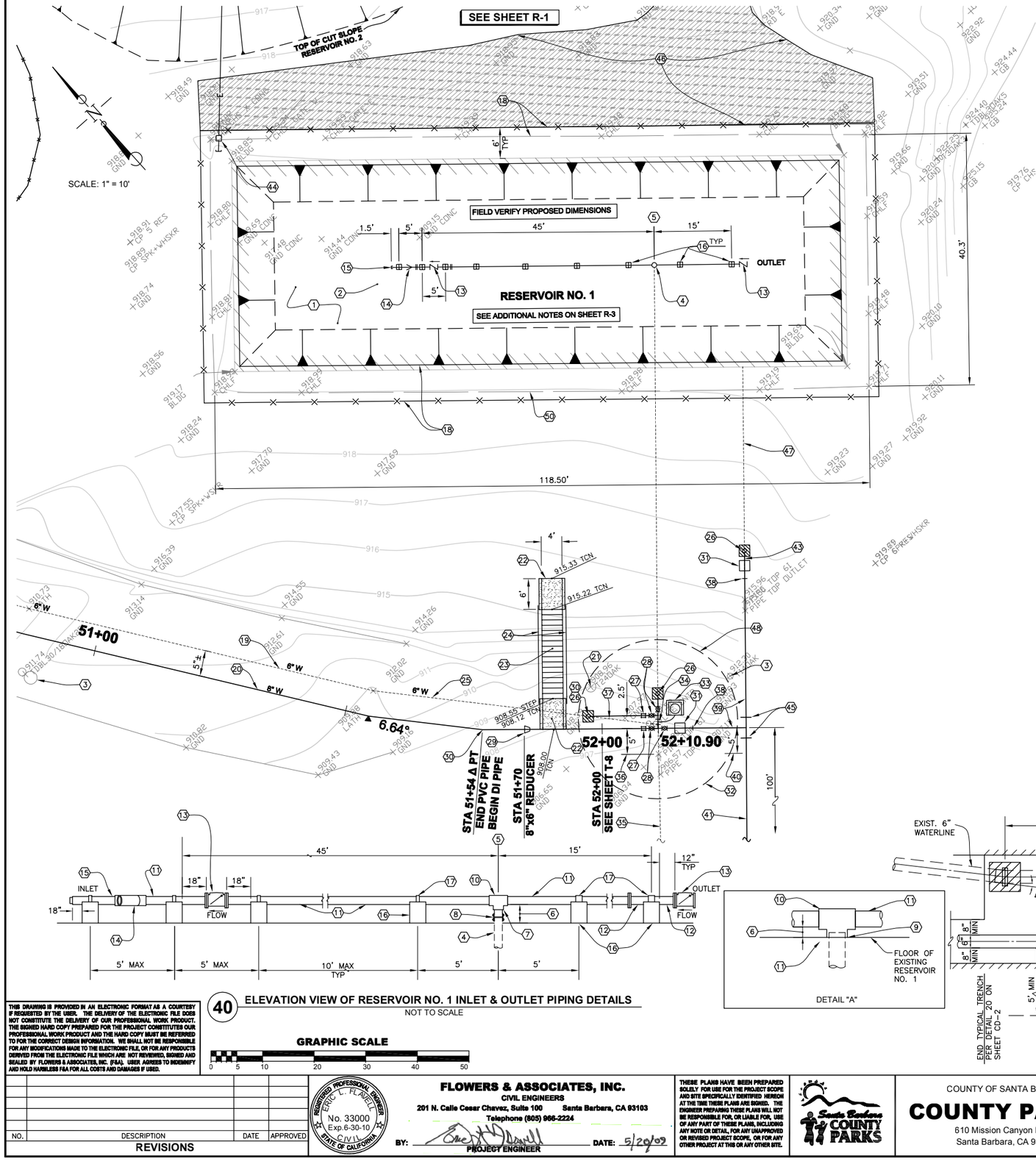
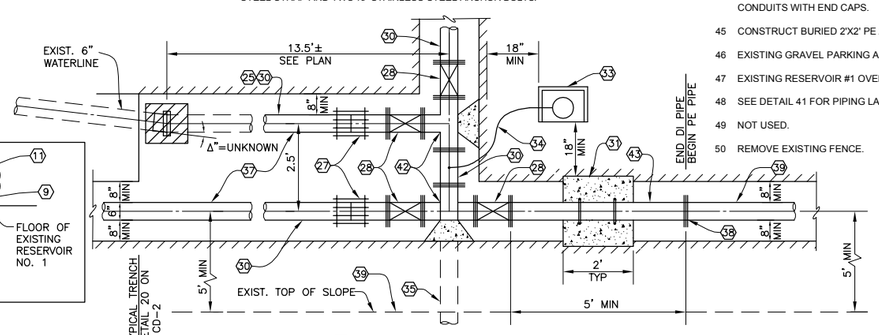


40 ELEVATION VIEW OF RESERVOIR NO. 1 INLET & OUTLET PIPING DETAILS

NOT TO SCALE



41 PLAN VIEW OF INLET / OUTLET PIPING DETAIL

NOT TO SCALE

GENERAL CONSTRUCTION NOTES THIS SHEET:

A. PROPOSED RESERVOIR SHALL BE COMPLETED, TESTED, DISINFECTED, BROUGHT ON-LINE AND STABILIZED PRIOR TO START OF CONSTRUCTION ON THE EXISTING RESERVOIR. WORK WITH PARKS PERSONNEL TO COORDINATE REMOVAL OF THE WATER IN THE EXISTING RESERVOIR. WATER THAT IS UNABLE TO BE REMOVED THROUGH THE WATER LOWERING PROCESS BY PARKS PERSONNEL SHALL BE REMOVED BY THE CONTRACTOR.

B. INLET PIPE SHALL BE EVALUATED BY THE CONTRACTOR AND ENGINEER PRIOR TO ORDERING ANY DISCHARGE ASSEMBLY COMPONENTS, EXCEPT THE CHECK VALVES AND DIP (FLG X FLG) SPOOL. METHOD OF CONNECTION AND FITTINGS SHALL BE AGREED TO BY THE ENGINEER IN WRITING PRIOR TO ORDERING THE PARTS.

C. ALL MATERIALS SUBJECTED TO WATER (ANYTHING INSIDE OF AND BELOW THE TOP OF THE CONCRETE RESERVOIR) SHALL BE STAINLESS STEEL, PVC OR EPOXY LINED AND COATED DUCTILE IRON.

D. CONTRACTOR SHALL INCLUDE A MINIMUM OF ONE 6" DIAMETER AND ONE 8" DIAMETER VERTICAL OFFSET WITH THRUST BLOCKS AND FITTINGS IN THE BID TO ALLOW FOR GRADE DIFFERENCE BETWEEN THE VARIOUS PIPELINES.

SPECIFIC CONSTRUCTION NOTES THIS SHEET:

(NUMBERED ITEM BELOW CORRESPONDS TO NUMBER WITHIN HEXAGON ON DRAWING)

1 REMOVE EXISTING RESERVOIR ROOF COVER AND DISPOSE. DELIVER ANY SALVAGE ITEMS IDENTIFIED BY THE COUNTY PRIOR TO REMOVAL. CONSTRUCT NEW COVER PER DETAILS ON SHEET S-4.1.

2 REMOVE WATER SYSTEM DEBRIS IN BOTTOM OF RESERVOIR PRIOR TO START OF CONSTRUCTION. AFTER ALL CONSTRUCTION IS COMPLETE CONTRACTOR SHALL CLEAN RESERVOIR CONCRETE BOTTOM AND SIDES. CONTRACTOR SHALL SWEEP AND VACUUM, AND THEN WASH AND SCRUB WITH BRUSHES USING A CHLORINE SOLUTION OF AT LEAST 75 PPM. RINSE AND REMOVE WATER PRIOR RESERVOIR TESTING AND DISINFECTION.

3 PROTECT TREE.

4 INLET PIPE, EXACT LOCATION, PIPE SIZE AND TYPE OF PIPE UNKNOWN. DISCHARGE ASSEMBLY PIPING WILL BE CONNECTED TO THIS PIPE. PIPE SHALL BE CLEANED TO SP-10 AND COATED WITH TWO COATS OF EPOXY. PIPE ANTICIPATED TO BE 6".

5 DISCHARGE ASSEMBLY, CONSTRUCT PER PLAN AND DETAIL 40 ON SHEET R-4. BID ON 6" PIPE AND FITTINGS.

6 CONSTRUCT DISCHARGE ASSEMBLY AS CLOSE TO RESERVOIR BOTTOM AS POSSIBLE. CONNECT AS SHOWN IN THIS DETAIL, OR IN DETAIL "A" OR BY AN ALTERNATIVE METHOD AGREED TO BY THE ENGINEER. THE GOAL IS TO REDUCE THE DIMENSION BETWEEN RESERVOIR FLOOR AND BOTTOM OF PIPE ASSEMBLY TO THE MINIMUM POSSIBLE.

7 CONSTRUCT PLAIN END NIPPLE AND CONNECT TO INLET PIPE. ALTERNATIVE METHOD OF CONNECTION PER NOTE 9.

8 CONSTRUCT NO HUB CONNECTION WITH STAINLESS STEEL BANDS. CONFIRM PIPE SIZES ARE COMPATIBLE PRIOR TO ORDERING.

9 ALTERNATE AND PREFERRED METHOD OF CONNECTION TO INLET PIPE. USE GASKETED PUSH ON TEE. PIPE FITTING CAN BE MODIFIED TO ACCOMPLISH CONNECTION. ONCE FITTING IS IN PLACE AND THE DISCHARGE ASSEMBLY BOLTED AND RESTRAINED TO THE PIPE SUPPORTS, CAULK CONNECTION POINT.

10 CONSTRUCT SOLVENT WELD OR RESTRAINED PUSH-ON FITTING AS DETERMINED BY CONNECTION TO INLET PIPE. CONFIRM WITH ENGINEER PRIOR TO ORDERING.

11 CONSTRUCT INLET AND OUTLET ASSEMBLY PIPING OF SCHEDULE 80 OR C900 PVC PIPE, EXCEPT WHERE DIP IS CALLED FOR.

12 CONSTRUCT 6" DIP SPOOL (FLG X FLG), 42" LONG, FUSION EPOXY LINED AND COATED. CONNECT TO PLASTIC PIPING WITH EPOXY COATED UNI-FLANGE.

13 CONSTRUCT 6" EPOXY LINED AND COATED LOW HEAD CHECK VALVE (FL X FL). CONNECT TO PLASTIC PIPING WITH EPOXY COATED UNI-FLANGE.

14 CONSTRUCT 6" SOLVENT WELD PVC DOUBLE WYE

15 CONSTRUCT 6" PLUG. SECURE WITH FOUR STAINLESS STEEL SCREWS DRILLED AND TAPPED THROUGH SOCKET.

16 CONSTRUCT CAST IN PLACE CONCRETE PIPE SUPPORT. PIPE SUPPORTS SHALL BE THE WIDTH OF THE PIPE PLUS 12" AND 12" WIDE. HEIGHT SHALL BE DETERMINED BY METHOD OF CONNECTION TO EXISTING PIPE. PIPE SHALL BE CENTERED AND SUPPORTED TO THE SPRING LINE.

17 CONNECT PIPE TO PIPE SUPPORT WITH FABRICATED ¼" THICK X 3" WIDE STAINLESS STEEL STRAP AND TWO ½" STAINLESS STEEL ANCHOR BOLTS.

SPECIFIC CONSTRUCTION NOTES THIS SHEET, continued:

(NUMBERED ITEM BELOW CORRESPONDS TO NUMBER WITHIN HEXAGON ON DRAWING)

18 REMOVE EXISTING FENCE AND SHEET METAL BARRIER AND DISPOSE. CONSTRUCT 6" BLACK PVC COATED CHAIN LINK FENCE WITH 1" OPENING AND 3-STRAND BARBED WIRE ON TOP AND SHEET METAL BARRIER. SHEET METAL BARRIER SHALL BE 24" WIDE WITH 6" BELOW GRADE AND 18" ABOVE GRADE. CONSTRUCT 4' WIDE GATE AT LOCATION DETERMINED BY PARKS PERSONNEL.

19 EXISTING WATERLINE, PROTECT IN PLACE.

20 PROPOSED 8" WATERLINE SEE SHEET T-8 FOR CONTINUATION.

21 PROTECT EXISTING TREE. PRUNE LOWER LIMBS AS REQUIRED TO CONSTRUCH STAIRS.

22 CONSTRUCT CONCRETE LANDING SLAB WITH MINIMUM CLEAR DIMENSIONS OF 4' X 6' X 6" THICK. GRADE TO HAVE MAXIMUM 1" REVEAL AT ENDS. CONSTRUCT 6" WIDE CURBS ABOVE AND BELOW THE SLAB ON SIDES AND AT STAIRS AS REQUIRED FOR GRADE DIFFERENCE.

23 CONSTRUCT WOOD STAIRS WITH MINIMUM 4' CLEAR WIDTH. TREADS SHOULD BE AT A SLOPE OF APPROXIMATELY 5" ON 12" WITH A MINIMUM DEPTH OF 11-1/2". STAIRS SHALL BE CONSTRUCTED ON CONCRETE PIERS WITH MINIMUM SPACING OF 5' AND MINIMUM BEARING AREA OF 2 SQUARE FEET AND MINIMUM EMBEDMENT OF 2.5'. CONTRACTOR SHALL PROVIDE ALL CONNECTION HARDWARE. PROVIDE LAYOUT FOR REVIEW PRIOR TO ORDERING MATERIALS.

24 CONSTRUCT GALVANIZED PIPE HANDRAIL IN ACCORDANCE WITH ADA REQUIREMENTS. PROVIDE LAYOUT FOR REVIEW PRIOR TO ORDERING MATERIALS.

25 POTHOLE AND EXPOSE PIPE AT CONNECTION POINT SHOWN APPROXIMATELY ON THE DRAWINGS. PROVIDE HORIZONTAL AND VERTICAL LOCATION TO THE ENGINEER. COORDINATE AND AGREE ON HOW EXISTING AND PROPOSED PIPING WILL BE CONNECTED AND THE FITTINGS REQUIRED TO CONSTRUCT THE CONNECTION OF THE EXISTING 6" WATER AND PROPOSED 8" WATER TO THE 6" SUPPLY/DRAINLINE AS SHOWN ON PLAN.

26 POTHOLE AND EXPOSE PIPE AT CONNECTION POINT SHOWN APPROXIMATELY ON THE DRAWINGS. PROVIDE HORIZONTAL AND VERTICAL LOCATION TO THE ENGINEER. CONNECT TO EXISTING PIPE WITH FITTINGS AND ADAPTERS AS REQUIRED. PIPE SHALL BE DIP.

27 CONSTRUCT FLEX COUPLER.

28 CONSTRUCT 6" GATE VALVE (FL X FL) PER DETAIL 25 ON SHEET CD-2.

29 CONSTRUCT 6" X 8" (FL X FL) REDUCER AND THRUST BLOCK

30 ALL PIPING FROM THIS POINT AND UP STATION SHALL BE (FL X FL) 6" DUCTILE IRON PIPE. CONSTRUCT FITTINGS AND ADAPTORS REQUIRED FOR HORIZONTAL AND VERTICAL ALIGNMENT DIFFERENCES BETWEEN TRANSMISSION LINES AND INLET / OUTLET PIPE.

31 CONSTRUCT CONCRETE ANCHOR BLOCK WITH MINIMUM TWO EPOXY COATED REBAR HOLD DOWNS SIMILAR TO THRUST BLOCK FOR VALVE. CONTRACTOR MAY SUBSTITUTE STAINLESS STEEL STRAPS PER NOTE 17 FOR REBAR HOLD DOWNS. ANCHOR BLOCK SHALL BE 8 CUBIC FEET MINIMUM. CONSTRUCT ANCHOR BLOCK PRIOR TO CUTTING PIPE.

32 SEE PIPING DETAIL 41 ON SHEET R-4.

33 CONSTRUCT 2" ARV PER DETAIL34 ON SHEET CD-3. EXACT LOCATION OF ARV TO BE DETERMINED IN THE FIELD ONCE TAP LOCATION IS CONFIRMED. CONSTRUCT CURB FOR GRADE DIFFERENCE.

34 CONFIRM TAP LOCATION FOR ARV WITH ENGINEER PRIOR TO CONSTRUCTING.

35 REMOVE EXISTING CANTILEVERED PIPE AND DISPOSE.

36 LOCATE NEW PIPING ASSEMBLY A MINIMUM OF 5' FROM TOP OF SLOPE.

37 CONSTRUCT 6" DIP PIPES PARALLEL AND 2.5' APART.

38 CONSTRUCT 6" DIP FLANGE AND CONNECT FLANGED HDPE PIPE WITH STAINLESS STEEL STIFFENER AND BACKING PLATES.

39 CONSTRUCT BURIED 6" HDPE PIPELINE WITH MINIMUM 18" OF COVER.

40 HDPE PIPE SHALL BE BURIED A MINIMUM OF 5' BEYOND TEE BEFORE PROJECTING OUT OF SLOPE. ADJUST DEPTH OF COVER TO ACCOMMODATE THIS REQUIREMENT.

41 CONSTRUCT 100' OF 6" HDPE PIPE. PIPE CAN BE PLACED ON THE SURFACE OF THE DRAINAGE SWALE. CONSTRUCT RIP RAP ENERGY DISSIPATER PER DETAIL 7 ON SHEET CD-1 AT END OF PIPE.

42 CONSTRUCT 6" DIP TEE (FLG X FLG X FLG)

43 CONSTRUCT 5' DIP NIPPLE (FLG X FLG). CENTER ANCHOR BLOCK ON NIPPLE.

44 CONSTRUCT FULL BOX AT END OF CONDUITS. SWAB AND CLEAN CONDUITS AND LEAVE PULL STRINGS IN PLACE FOR FUTURE WORK. CONSTRUCT 24" LONG STUB OUT CONDUITS WITH END CAPS.

45 CONSTRUCT BURIED 2'X2' PE ANCHOR WELDED TO PIPE.

46 EXISTING GRAVEL PARKING AREA TO REMAIN AS SHOWN.

47 EXISTING RESERVOIR #1 OVERFLOW DRAINLINE.

48 SEE DETAIL 41 FOR PIPING LAYOUT IN THEIS AREA.

49 NOT USED.

50 REMOVE EXISTING FENCE.

GRAPHIC SCALE

0 5 10 20 30 40 50

NO.	DESCRIPTION	DATE	APPROVED
	REVISIONS		

REGISTERED PROFESSIONAL ENGINEER ERIC L. FLAWELL No. 33000 Exp.6-30-10 CIVIL STATE OF CALIFORNIA

FLOWERS & ASSOCIATES, INC.
CIVIL ENGINEERS
201 N. Calle Cesar Chavez, Suite 100 Santa Barbara, CA 93103
Telephone (805) 966-2224
BY: _____ PROJECT ENGINEER DATE: 5/20/09

COUNTY OF SANTA BARBARA
COUNTY PARKS
610 Mission Canyon Road
Santa Barbara, CA 93105

Design: ELF	Check: BS
Drawn: SS	
Project Engineer:	
Date:	

EXISTING RESERVOIR NO. 1 PIPING MODIFICATIONS PLAN

LAKE CACHUMA WATER STORAGE AND DISTRIBUTION SYSTEM IMPROVEMENTS
COUNTY OF SANTA BARBARA, CALIFORNIA

R-4

SHT. 8 OF 35

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